

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

INTERDIGITAL COMMUNICATIONS,
INC., a Delaware corporation,
INTERDIGITAL TECHNOLOGY
CORPORATION, a Delaware corporation,
IPR LICENSING, INC., a Delaware
corporation, and INTERDIGITAL
HOLDINGS, INC., a Delaware corporation,

Plaintiffs and Counterclaim
Defendants,

v.

HUAWEI TECHNOLOGIES CO., LTD., a
Chinese corporation, FUTUREWEI
TECHNOLOGIES, INC. D/B/A HUAWEI
TECHNOLOGIES (USA), a Texas
corporation, and HUAWEI DEVICE USA,
INC., a Texas corporation,

Defendants and
Counterclaim Plaintiffs.

Civil Action No.: 1:13-cv-00008-RGA

JURY TRIAL DEMANDED

INTERDIGITAL COMMUNICATIONS,
INC., a Delaware corporation,
INTERDIGITAL TECHNOLOGY
CORPORATION, a Delaware corporation,
IPR LICENSING, INC., a Delaware
corporation, and INTERDIGITAL
HOLDINGS, INC., a Delaware corporation,

Plaintiffs and Counterclaim
Defendants,

v.

ZTE CORPORATION, a Chinese corporation,
and ZTE (USA) INC., a New Jersey

Civil Action No.: 1:13-cv-00009-RGA

JURY TRIAL DEMANDED

corporation,

Defendants and
Counterclaim Plaintiffs.

INTERDIGITAL COMMUNICATIONS,
INC., a Delaware corporation,
INTERDIGITAL TECHNOLOGY
CORPORATION, a Delaware corporation,
IPR LICENSING, INC., a Delaware
corporation, and INTERDIGITAL
HOLDINGS, INC., a Delaware corporation,

Plaintiffs and Counterclaim
Defendants,

v.

NOKIA CORPORATION, and NOKIA, INC.,

Defendants and
Counterclaim Plaintiffs.

Civil Action No.: 1:13-cv-00010-RGA

JURY TRIAL DEMANDED

JOINT CLAIM CONSTRUCTION BRIEF

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PLAINTIFFS' EXPLANATION OF CITATIONS

Citations to “ ’847 Patent” refer to U.S. Patent No. 7,286,847.

Citations to “ ’966 Patent” refer to U.S. Patent No. 7,190,966.

Citations to “ ’151 Patent ” refer to U.S. Patent No. 7,941,151.

Citations to “ ’244 Patent” refer to U.S. Patent No. 8,380,244.

Citations to “ ’010 Patent” refer to U.S. Patent No. 5,799,010.

Citations to “ ’970 Patent” refer to U.S. Patent No. 7,616,970

Citations to “ ’049 App.” refer to U.S. Provision Application No. 60/523,049.

Citations to “ ’151 PH” refer to the ’ 151 Prosecution History, attached hereto as Ex. [16].

Citations to “ ’244 PH” refer to the ’244 Prosecution History, attached hereto as Ex. [17].

Citations to “613 ID” refer to the ALJ’s Opinion in ITC Investigation No. 337-TA-613, attached hereto as Ex. [20].

Citations to “Dahlman” refer to Dahlman, et al., 3G Evolution HSPA and LTE for Mobile Broadband (2007), attached hereto as Ex. [15].

Emphasis is added throughout the brief unless otherwise noted.

DEFENDANTS' EXPLANATION OF CITATIONS

“004 Patent” and “004 Pat.” refer to U.S. Patent No. 7,117,004.

“010 Patent” and “010 Pat.” refer to U.S. Patent No. 5,799,010.

“098 Application” and “098 App.” refer to U.S. Patent App. No. 12/615,098.

“151 Patent” and “151 Pat.” refer to U.S. Patent No. 7,941,151.

“151 Pat. Pros. Hist.” refers to the prosecution history of U.S. Patent App. No. 11/709,970.

“151 Provisional,” “151 Prov.,” “049 Application,” and “049 App.” refer to U.S. Provisional App. No. 60/523,049.

“244 Patent” and “244 Pat.” refer to U.S. Patent No. 8,380,244.

“405 Patent” and “405 Pat.” refer to U.S. Patent No. 7,200,405.

“405 Pat. Pros. Hist.” refers to the prosecution history of U.S. Patent App. No. 10/902,704.

“536 Patent” and “536 Pat.” refer to U.S. Patent No. 6,081,536.

“847 Patent” and “847 Pat.” refer to U.S. Patent No. 7,286,847.

“966 Patent” refers to U.S. Patent No. 7,190,966.

“970 Patent” and “970 Pat.” refer to U.S. Patent No. 7,616,970.

“Motorola 1250” refer to R1-02-1250, TSG-RAN Working Group 1 #28-bis, Motorola, Uplink enhancements for dedicated transport channels, Espoo, Finland, Oct. 2002, NK868ITC009843144-NK868ITC009843147.

“Siemens Reference” refers to R1-030004, TSG-RAN Working Group 1 #30, Siemens, Downlink Control Channel Configuration for Enhanced Uplink Dedicated Transport Channel, San Diego, USA, Jan. 2003, NK868ITC015910712-NK868ITC015910713.

Emphasis is added throughout the brief unless otherwise noted.

PLAINTIFFS' INTRODUCTION

Plaintiffs InterDigital Communications, Inc., InterDigital Technology Corporation, IPR Licensing, Inc., and InterDigital Holdings, Inc. (collectively "InterDigital") invest in and develop new technologies, including wireless technologies for advanced voice and data communications. InterDigital has been and is at the forefront of several fundamental inventions in wireless modem design, air interface technology, and end-to-end system architecture that are the core of mobile devices, networks, and services used by billions of users around the world today.

As part of those efforts, InterDigital has been a wireless pioneer and major contributor to the definition of standards for 2G, 3G, and 4G technologies. In addition to internal engineering efforts, InterDigital has established research and development relationships with other technology leaders and collaborates with a wide range of companies across the wireless ecosystem on integrating its advanced technologies into products and services for field testing and commercial deployment.

The four patents at issue here represent innovations in wireless communications technology that benefit manufacturers, retailers, and consumers of products used in wireless communication. But instead of licensing InterDigital's advanced technology, Defendants enjoy the benefits of, but refuse to compensate InterDigital for, its innovation.

To avoid paying for the technology they practice, Defendants have proposed exotic and erroneous constructions that depart from the language of the claims. In contrast, InterDigital proposes constructions that hew close to the claim language because it is the claim language that "frames and ultimately resolves all issues of claim interpretation." *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997).

For example, while InterDigital seeks a plain language construction for the simple three-word English claim term: "first power level." Defendants seek a wholesale revision of the term, asking this Court to rewrite it: "a power level lower than the minimum power level required for communicating with the base station." Nothing in the words "first power level" include the concepts of "lower than minimums," "communication," or "base stations." *See Amgen, Inc. v.*

Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003) (“It is improper for a court to add extraneous limitations to a claim, that is limitations added wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.”) Moreover, Defendants’ construction eliminates the idea or concept of “first.” See *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (“[C]ourts may not redraft claims.”).

The example of “first power level” is typical of the different approaches of the parties to claim construction. Rather than simply construing the words of the terms in dispute, Defendants seek to add limitations that are not written in the claims. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (holding that “if we once begin to include elements not mentioned in the claim, in order to limit such claim ... we should never know where to stop.” (internal quotations omitted)).

InterDigital proposes that instead of amending or redrafting the claims, the Court should construe them as written because “[c]laims mean precisely what they say.” *Cent. Admixture Pharmacy Servs., Inc. v. Advanced Cardiac Solutions, P.C.*, 482 F.3d 1347, 1355 (Fed. Cir. 2007).

DEFENDANTS’ INTRODUCTION

InterDigital’s proposed constructions span several patents but share a common flaw: they ignore what the inventors actually disclosed and told the Patent Office. As a result, InterDigital’s constructions broadly and unreasonably cover technologies far removed from what the inventors originally disclosed and claimed as their invention. By contrast, Defendants’ proposed constructions define the claim terms consistent with the intrinsic evidence and the representations InterDigital made to secure allowance of the asserted patent claims.

847 AND 966 PATENTS

The 847 and 966 Patents (collectively the “Power Ramp-up Patents” or “PRU Patents”) are directed to a process for establishing a transmission power level when a mobile station (*e.g.*, a handset) is first establishing communications with a CDMA network. At the heart of the

purported invention is a random access procedure that uses short codes, which were well-known in the art, in combination with known power ramping techniques.

InterDigital advocates that its claim terms should be given the broadest possible meaning, irrespective of the intrinsic evidence. This is because InterDigital has spent the last 16 years prosecuting the Power Ramp-up Patents and with each new application has drifted farther and farther from the actual invention disclosed in the specification. Additionally, when pinned in by express statements in the specification about the scope of any supported invention, InterDigital resorts to irrelevant extrinsic evidence, such as dictionary definitions that are far outside the context of CDMA cellular systems. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed. Cir. 2005) (“[E]xtrinsic evidence . . . is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.”).

In contrast, Defendants’ proposed constructions define the claim terms according to what InterDigital told the USPTO—and indeed the world—their invention was. Rather than broaden the claim scope to encompass that which InterDigital never disclosed or invented, or in some cases to encompass that which InterDigital specifically told the world was outside the scope of their invention, Defendants’ constructions are tied to the alleged invention actually disclosed in and required by the specification. *See Philips*, 415 F.3d at 1315 (“The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.”) (internal citations and quotation marks omitted).

151 PATENT

Prior to the purported invention of the 151 Patent, existing WCDMA systems employed HSDPA (or “high speed downlink packet access”) to allow for high-speed data transmission from a base station to a mobile phone. The purported invention of the 151 Patent was directed to controlling a similar enhanced data channel in the uplink direction. In particular, the 151 Patent proposes the obvious idea of controlling the enhanced uplink data channel in WCDMA systems by reusing the same control channel used for downlink data channels in HSDPA. With its unsupported and unreasonably broad claim construction proposals, InterDigital now seeks to

extend the 151 Patent claims well beyond WCDMA to cover a newer—and very different—wireless standard that uses neither the same control channel nor the same radio access technology.

HSDPA was designed for the UMTS WCDMA standard to increase the throughput for downlink (base station-to-WTRU) communications (151 Pat. at 1:24-28; Ex. 24 (151 Prov.) at ¶ [0006]). After HSDPA, the same standards working group (known as “3GPP Working Group 1”) developed a technology that would provide the same increase for uplink (WTRU-to-base station) communications (Ex. 24 (151 Prov.) at ¶ [0005]). The 151 Patent refers to this technology as “FDD Enhanced UL” and “Enhanced Uplink” (Ex. 24 (151 Prov.) at ¶ [0005]; 151 Pat. at 1:55-65). Prior to the filing of the 151 Provisional, it was well known that 3GPP had agreed to use a new Enhanced Uplink channel to transmit user data and was considering two alternatives for transmitting the control data for this new channel (*see, e.g.*, Ex. 25 (Siemens Reference) at 1-2; Ex. 26 (Motorola 1250) at 1-2). The first alternative used a new control channel while the second contemplated reusing the preexisting control channel (referred to as HS-SCCH) (*id.*; *see also* Ex. 27 (Dick Tr.) at 94:10-23, 97:25-98:16, 98:17-99:15, 101:11-102:3

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The later-filed 151 Patent is likewise directed to schemes for reusing the HS-SCCH, and the asserted claims cover techniques previously disclosed to the inventors by other members of the 3GPP working group (*see* Ex. 24 (151 Prov.) at ¶¶ [0018]-[0019]; 151 Pat. at 1:66-2:12; Ex. 25 (Siemens Reference) at 1).

REDACTED

so InterDigital could not assert the 151 Patent against 3G products. Instead, InterDigital is stretching the claims to cover a fundamentally different technology called Long Term Evolution (LTE). A number of the claim construction disputes in this matter turn on basic differences between the CDMA-based system described and claimed in the 151 Patent and LTE, which does not use CDMA. As explained below, InterDigital’s constructions take terms with meanings that were clearly defined in CDMA systems, such as “physical channel,” and distort them well beyond what a person of ordinary

skill would understand in order to map them onto later-developed and fundamentally different technology.

244 PATENT

The 244 Patent is no exception to InterDigital's practice of stretching the claims well beyond the invention disclosed in the original specification. The fundamental concept disclosed in the 244 Patent is to combine cellular and W-LAN functionality into a "dual-mode" device. Such "dual-mode" devices can use either a faster, less expensive, short-range wireless link (W-LAN) or a slower, more expensive, long-range wireless link (cellular). A requirement of the disclosed dual-mode capability is that it automatically selects one of the links, based on availability of the W-LAN link and without manual reconfiguration. The other requirement is that a "spoofing" function prevents unnecessarily hogging the unused bandwidth. This "spoofing" technique fools the device into believing that that link is available for use, even though it is not. The advantage of "spoofing" is that bandwidth is freed up for use by other devices.

InterDigital's claim constructions attempt to impermissibly broaden the meaning of the claims well beyond what was explained and understood by the examiner during prosecution. InterDigital's previous attempt to redefine and broaden these claims was already rejected by the patent examiner, and here, it should be rejected again.

AGREED-UPON CONSTRUCTIONS

The parties have agreed to the following constructions:

Claim Term	JOINT CONSTRUCTION
U.S. Patent No. 7,190,966; 7,286,847	
message	data to be communicated
U.S. Patent No. 7,941,151	
and if so	and after determining that the downlink control information is intended for the WTRU
wireless transmit/receive unit	a device capable of communicating with a cellular or wireless network
U.S. Patent No. 8,380,244	
[an] IEEE 802.11	hardware alone or in combination with software operable to transmit

transceiver	and/or receive IEEE 802.11 signals
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DISPUTED CONSTRUCTIONS

I. '847 Patent: “carry[ing] no data/not providing data/does not include data” (claims 1, 2, 4, 7, 8, 10)

1. Plaintiffs’ Opening Position

The '847 Patent uses these terms according to their ordinary and customary meaning: “not modulated by data.” *See* '847 at Claims 1, 2, 4, 7, 8, 10; 5:9-13, 7:44-49. Defendants’ proposed construction is “not modulated by an information signal.” The dispute is thus over the term “data,” and whether it should be construed so broadly that it could include any information.

The claim language and specification support InterDigital’s construction. “Data” in the claims and specification refers to the cellphone’s baseband data signal. As the Federal Circuit explained, CDMA “assigns a unique code ... used to encode and decode the data-carrying signal that transmits the telephonic messages between the cellphone and the base station.” *InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1320-21 (Fed. Cir. 2012). In other words, the “[cellphone’s] baseband data signal (the signal that carries the telephonic communications) ‘is multiplied by a code sequence, called the ‘spreading code,’ which has a much higher rate than the data.’” *Id.* at 1321 (citing '966 at 2:3-5)). And as the Federal Circuit found, “[i]f a code carries no data, i.e., if it is **not modulated with a data signal**, there is no signal whose bandwidth is increased.” *Id.* at 1326.

Defendants’ proposed construction is wrong because it equates “data” with “information.” Defendants seek this construction because in the accused devices the signals that “carry no data” consist of the combination of two codes, neither of which is data. The codes do contain information, but any signal in a CDMA system contains information because otherwise there would be no reason to generate the signal in the first place. For example, a spreading code by itself is not “data” even though it contains coding and timing information. Thus, Defendants’ construction would preclude modulation with **any** signal, contrary to the applicants’ express

intent in using the word “data.” But nothing in the claim language or specification indicates that the signals that “carry no data” cannot be modulated by any other signal. Defendants’ attempt to expand “data” to include any information signal runs afoul of the canons of construction that prevent a court from rewriting claim limitations. *See Chef Am., Inc.*, 358 F.3d at 1374 (“[C]ourts may not redraft claims.”).

2. Defendants’ Answering Response

Each of these phrases should be construed to mean “not modulated by an information signal.” Defendants’ proposal is consistent with the intrinsic evidence. The 010 patent, which InterDigital argues is incorporated by reference into the 847 specification, expressly supports Defendants’ construction:

Spread spectrum modulation refers to *modulating a information signal with a spreading code signal* Synchronous reception and despreading of the signal at the receiver recovers the original information. A synchronous demodulator in the receiver uses a reference signal to synchronize the despreading circuits to the input spread-spectrum modulated signal to recover the carrier and information signals. *The reference signal can be a spreading code which is not modulated by an information signal.*

(Ex. 21 (010 Pat.) at 1:36-54; *see also* 847 Pat. at 5:9-13, 7:44-49.) This demonstrates that InterDigital is wrong when it argues that Defendants’ construction would exclude all CDMA signals. The PRU Patents unambiguously contemplate transmission in a CDMA system of spreading codes that are “not modulated by an information signal” (Ex. 21 (010 Pat.) at 1:36-54; 847 Pat. at 7:44-49).

Defendants’ proposal also is consistent with the construction adopted by ALJ Luckern in ITC Investigation No. 337-TA-613. ALJ Luckern interpreted “carry no data” in claims 1 and 2 of related U.S. Patent No. 7,117,004 (the parent for the 966 and 847 Patents) to mean “not modulated by an information signal,” just as Defendants now propose (*see* Ex. 22 (337-TA-613 ID) at 60).

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants are wrong that their construction is consistent with the intrinsic evidence: none of the evidence they cite mentions a signal that carries no information. Instead, the intrinsic evidence supports InterDigital's construction. For example, each cite describes a signal that carries no *data*, not no information: (1) "The pilot code 40 is a spreading code which carries no *data bits*. The pilot code 40 is used for [SU] acquisition and synchronization ...", '847 Patent at 5:9-13; and (2) "The spreading code ... is much shorter than the rest of the spreading codes The short code used for this purpose carries no *data*." *Id.* at 7:44-49.

Defendants' use of the '010 Patent is unavailing because it states that the reference signal – not the successively transmitted signals – "*can be* a spreading code which is not modulated by an information signal."¹ Thus, the excerpt is only an example of a signal that could be used in the procedure. And, as shown above, other examples include signals that do not carry data.

ALJ Luckern's findings in the 613 ID do not support Defendants' construction. Here, the relevant claim limitations recite that the successively transmitted signals or codes carry no data, or do not provide data, "*of the subscriber unit*." The claim limitations at issue in the 613 investigation (from claims 1 and 2 of the '004 Patent) required only that "code signals carry no data" or "the transmitted codes ... carry no data." ALJ Luckern's findings related to different claim language in a different context, and are thus inapposite.

4. Defendants' Sur-Reply

ALJ Luckern's findings in the 613 investigation are not "inapposite." To the contrary, the "carry no data" limitations at issue in the 613 investigation, like the present limitations, are the short codes transmitted by the subscriber unit during power ramp-up (*compare* Ex. 48 (004 Pat.) claim 1 ("transmitting dynamically selected code signals [that carry no data] at increasing power levels...") *with* 847 Pat. claim 8 ("repeating the transmitting of a code of a first type [that does not include data], each repeated transmission being at an increased power level ..."). Thus, ALJ Luckern's findings relate to similar claim language used in the same context.

¹ Of course, this excerpt is not even relevant to the term because it does not describe the successively transmitted signals of the disclosed random access procedure.

II. '966 and '847 Patents²: “code” ('966 claims 1, 5; '847 claims 1-11)

1. Plaintiffs' Opening Position

This term has already been construed by the Federal Circuit in accordance with its plain meaning: “a sequence of bits (if the ones and zeros are transmitted at the ‘data rate’ or chips (if the ones and zeros are transmitted at the faster ‘chip rate.’).” See *InterDigital Commc'ns*, 690 F.3d at 1323-27. The Federal Circuit ruled that the plain meaning governs because “[n]either the specification nor the prosecution history contains a restrictive definition of ‘code’”. See *id.* at 1324. InterDigital agrees that “code” should be given its plain meaning for the same reasons.

2. Defendants' Answering Response

The term “code” should be construed as “sequence of chips or bits not modulated by a data signal.” The parties agree about the first part of this construction. They only dispute whether a sequence of chips or bits that *is* modulated by a data signal remains a “code.”

To be clear, codes are routinely modulated by data signals in CDMA systems. However, once a code is modulated with a data signal, the result is no longer just a code. The result is *modulated data* (e.g., modulation using a spreading code produces spread data, and modulation using a scrambling code produces scrambled data). See, e.g., *InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 690 F.3d 1318, 1327 (Fed. Cir. 2012) (explaining that, in the context of the PRU patent disclosure, a code spreads data if the code is at “a higher chip rate than the data signals they modulate” and the code scrambles data if there is no rate differential between the code and the data signal). *If* the claimed codes were applied to a data signal (contrary to the specification), then one of ordinary skill could determine whether the code is a “spreading” code or a “scrambling” code. However, the Federal Circuit made clear that these labels cannot be applied to the claimed codes because these codes “carry no data and are not intended to do so.” *Id.* at 1326. Therefore, when the claims recite a “code,” they are referring to a sequence of chips or bits that has *not* been modulated by a data signal.

² The '847 and '966 share a common specification. Thus, citations to the specification of one of the patents is equally applicable to the other patent and vice versa.

In addition to modulating data, codes may also be used for other purposes. In the PRU Patents, certain types of codes (referred to as “short codes”) are transmitted only as codes during the power ramp up procedure and, therefore, carry no data (847 Pat. at 7:44-49).³ Indeed, a person of ordinary skill in the art would understand that a “code” by itself carries no data. The PRU Patents reaffirm this understanding by expressly noting that the short codes are spreading codes that “carr[y] no data” (847 Pat. at 7:44-49; Ex. 21 (010 Pat.) at 12:1-4, 44:3-11). Since the short codes are described as being selected portions of a longer code, the longer code also necessarily must not carry data (*see* 847 Pat. at 7:41-49, 9:14-28, Fig. 8).

Indeed, if the short codes were modulated by data (in direct conflict to the disclosure), the disclosed embodiments and the claimed inventions would not work. The PRU Patents disclose that the base station searches for an access code (first embodiment) or short code followed by an access code (preferred embodiment) transmitted by the subscriber unit. When the base station detects these codes, it sends back to the subscriber unit an indication that the code has been detected (*see, e.g.*, 847 Pat. at 7:15-25, 8:32-35, 9:54-61). The only way the base station can know when it has found the access or short code is if it knows what to look for. Indeed, the PRU Patents say that the code is “known” (*see, e.g.*, 847 Pat. at 6:20-23). But if the access code or short code were modulated by data, the base station would not know what to look for (because, as noted, once a “code” is modulated by data the result is no longer just a “code”), and as a result the base station would be unable to detect the code or send back to the subscriber unit the “indication” that the code was received as disclosed (*see, e.g.*, 847 Pat. at 3:30-36, 7:15-25, 8:32-35). Thus, any data transmitted before acquisition of the access code would be lost and would simply add unnecessary interference to the disclosed invention, which would directly contradict one of the stated goals of the invention: minimize interference (*see also* 847 Pat. at 2:1-5, 7:44-49, 8:11-13, 8:15-20, 9:14-28, Fig. 8). All of this reaffirms that a “code” is not modulated by a data signal.

³ The 847 and 966 Patents share a common specification. Thus, citations to the specification of one of the patents are equally applicable to the other patent and vice versa.

Contrary to InterDigital's argument, Defendants' construction is consistent with the Federal Circuit's opinion in the appeal of the 613 Investigation. *InterDigital*, 690 F.3d at 1325, 1326. In that case, the Federal Circuit was asked to consider only whether a "code" is limited to a spreading code or can refer more broadly to other types of codes. The claim construction dispute in that case did not address whether a sequence of chips or bits that is modulated by data falls within the meaning of "code." Nevertheless, the Federal Circuit expressly noted that the codes described in the PRU Patents are not modulated by data. *Id.* ("As noted, the specification describes various codes, such as pilot codes and short codes, as 'spreading codes' even though they carry no data and are not intended to do so.").

Defendants' construction is also consistent with ALJ Shaw's recent Initial Determination in ITC Investigation No. 337-TA-800. There, the ALJ addressed U.S. Patent Nos. 7,706,830 ("830 Patent") and 8,009,636 ("636 Patent"), which are related to and share a common specification with the 830 and 947 Patents. ALJ Shaw concluded that the common specification discloses "that the codes successively transmitted during the random access process (*i.e.*, the short codes) are neither modulated with data, nor used to modulate data.... In other words, the 'codes' themselves are what are successively transmitted, not codes modulated with data." (Ex. 20 (337-TA-800 ID) at 24) (citing to *InterDigital*, 690 F.3d at 1326).⁴

3. Plaintiff's Reply to Defendants' Answering Response

Defendants' construction should be rejected because it conflicts with the Federal Circuit's binding ruling on the meaning of "code." See *Flexsys Am. LP v. Kumho Tire U.S.A., Inc.*, 695 F. Supp. 2d 609, 617 (N.D. Ohio 2010) ("[T]he Federal Circuit's claim interpretation [has] a strong presumption of correctness, which may only be overcome by compelling reasons such as 'evidence or arguments not presented to the Circuit panel or, in the rarest of cases, plain error on

⁴ ALJ Shaw further concluded that if the "successively sent transmissions" recited in the 830 and 636 Patents were interpreted to cover transmission of a code modulated by data (*i.e.*, encoded data), then the claims as so construed would not be supported by the common specification and would be invalid under 35 U.S.C. § 112 for lack of written description. (Ex. 20 (337-TA-800 ID) at 93.)

the face of the Federal Circuit opinion.”). The Federal Circuit held that the plain meaning of “code” governs because: (1) “[n]either the specification nor the prosecution history contains a restrictive definition of ‘code,’” and (2) “the patentee did not at any point disavow the broader interpretation of that term.” *InterDigital*, 690 F.3d at 1324. The Federal Circuit therefore ruled that “code” means “a sequence of bits (if the ones and zeros are transmitted at the ‘data rate’) or chips (if the ones and zeros are transmitted at the faster ‘chip rate’).” *Id.*

Defendants nevertheless ask the Court to add that the sequence of bits or chips cannot be modulated by a data signal. But the plain meaning says nothing about modulation or data. Indeed, the Federal Circuit found that “code” means sequence of chips or bits “regardless of whether the code is used or intended to be used to spread [*i.e.*, modulate] data.” *Id.* at 1326. So according to the Federal Circuit, a “code” may or may not be modulated by data. *See, e.g., id.* at 1324 (“code” is “broad enough to cover both a spreading code and a nonspreading code.”).

Defendants’ construction also relies on two false premises: (1) that a modulated code is no longer “just a code,” and (2) that a code somehow disappears after it is modulated by a data signal. Def. Br. at 3. As an initial matter, many of the claims do not even require that the “code” be transmitted. They simply require the use of a “code” to generate certain transmissions. *E.g.*, ’847 Patent at 11:62-64 (“the transmitter successively transmits signals generated using a portion of a code”). Thus, even if it were true that modulation by a data signal renders a code no longer a code (and it is not), Defendants’ construction is improper because nothing in the claims says the code must remain a code. For this reason alone, Defendants’ construction cannot stand.

Similarly, the claims requiring transmission of a “code” do not say that the code cannot be modulated by a data signal before transmission. And nothing in the specification supports Defendants’ assertion that a code modulated by a data signal is no longer a code, or that such modulation eliminates the code. A code that encodes a data signal is still present in the transmission; otherwise, the base station would not be able to decode the data signal.

Defendants argue that if the short codes or access codes were modulated by data, the system would not work because the base station would not be able to detect them. But nothing in

the claims says the base station can only detect transmissions that are “not modulated by data.” Further, even as to their hypothetical system, Defendants wrongly assume that only the subscriber unit knows the data. Defendants provide no support for this assumption, and disregard the knowledge of a person of ordinary skill in the art. If both sides must know the data, then adding the data to one side means the same data must be added to the other side. Notably, the ALJ in the 800 investigation rejected the very same argument, finding that “it relies on a hypothetical system in which ... the base station can only detect unmodulated codes.” (Ex. 20 (800 ID) at 32.)

Defendants’ argument regarding ALJ Shaw’s purported findings also fails. ALJ Shaw construed the term “successively sent signals,” not “code.” Successively transmitted “codes” are not the only “codes” recited in the claims: claim 1 of the ’966 patent recites that “each of the successively transmitted signals and the message are generated using a same *code*.” *See also* ’966 Patent at 11:16-17. As discussed above, the message contains data and is not successively transmitted. ALJ Shaw’s purported findings thus do not support Defendants’ construction.

4. Defendants’ Sur-Reply

The Federal Circuit’s prior ruling is not binding *on a question it did not address*. The Federal Circuit decided whether “code” has a more restrictive meaning than its plain meaning, but it did not address the question presented here, which is whether the plain meaning covers modulated data. InterDigital also argues that “nothing in the claims says the code must remain a code”. This is a blatant attempt to interpret the word “code” to cover things that are not codes. There can be no dispute that where a claim recites a “code,” that term can only cover a sequence of bits or chips that *is still a code*.

InterDigital is also wrong that “nothing in the specification supports Defendants’ assertion that a code modulated by a data signal is no longer a code”. To the contrary, the *entire* specification is consistent with Defendants’ construction, and Defendants have already cited numerous examples. Tellingly, InterDigital does not cite a single example in the common specification referring to a sequence of bits or chips that has been modulated by data as a “code.”

Defendants do not argue that “the base station can only detect transmissions that are ‘not modulated by data’”. Base stations routinely detect modulated data, but they *cannot* and *do not* do so during the power ramp-up procedure. As explained in the common specification, the base station will not recognize modulated data during ramp-up: “[w]hen a communication link is desired, the base station 14 must acquire the signal transmitted from the subscriber unit 16 [during ramp-up] *before it can demodulate the data*” (847 Pat. at 5:57-59).

Moreover, InterDigital’s attempt to distinguish between transmission of a “code” and use of a “code” to generate successively transmitted signals is misplaced. The transmitted short codes are described as portions of the longer code used to generate them (*see* 847 Pat. at 7:41-49, 9:14-28, Fig. 8). There is nothing to suggest that either code would be modulated by data, so they should both be construed consistently. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) (“a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent.”).

Contrary to InterDigital’s assertion, ALJ Shaw did not reject Defendants’ argument that the system would not work if the short code were modulated by data. InterDigital’s quote from ALJ Shaw’s decision omits a crucial phrase that reverses the meaning of the quote. When read in context, ALJ Shaw’s finding *supports* Defendants’ argument on this term. Specifically, ALJ Shaw found that Defendants’ claim construction argument with respect to another claim term “relies on a hypothetical system in which the handset modulates the codes before transmission, *even though the base station can only detect unmodulated codes*” (Ex. 20 (337-TA-800 ID) at 32). ALJ Shaw rejected this hypothetical as inconsistent with his finding that a base station can only detect unmodulated codes during power ramp-up, which is consistent with his conclusion that there is no written support for claims that cover the transmission of codes that have been modulated by data (Ex. 20 (337-TA-800 ID) at 93). In short, ALJ Shaw said the *exact opposite* of what InterDigital represents to this court.

III. ‘847 Patent: “code of a second type” (claim 8)

1. Plaintiffs’ Opening Position

This phrase does not require construction because, aside from “code” which is already being construed, it consists of the plain English words “of a second type.” The phrase “of a second type” simply modifies the word “code” and defines its relation to the “code of the first type.” See ’847 at Claim 8. Nothing in the ’847 Patent claims or specification indicates an intent to define “of the second type” in a special way. See *Virginia Panel Corp. v. Mac Panel Co.*, 133 F.3d 860, 866 (Fed. Cir. 1997) (“without an express intent to impart a novel meaning to claim terms, an inventor’s claim terms take on their ordinary meaning.”) (citation and quotation marks omitted).

2. Defendants’ Answering Response

This phrase should be interpreted to mean “sequence of chips or bits of a type different from the first type, not modulated by a data signal, transmitted during power ramp-up to facilitate the initiation of communications.” This construction breaks down into three parts. First, as noted above, “code” means a “sequence of chips or bits not modulated by data.” Second, “of a second type” necessarily must mean different from the “first type.” Third, in the context of the PRU Patent claims, this code must be transmitted during power ramp-up to facilitate the initiation of communications.

In the context of the claim language, the “code of a second type” is a code transmitted after a determination is made that the subscriber unit has received an acknowledgement signal indicating that the base station has received “a code of the first type” (847 Pat. at claim 8). The only disclosure in the common specification corresponding to such a “code of a second type” is the “access code” transmitted during the power ramp-up process and only after the subscriber unit receives the acknowledgement that short codes have been detected by the base station:

An overview of the *ramp-up procedure* in accordance with the preferred current invention is summarized in FIGS. 11A and 11B.... *Upon receiving the detection indication, the subscriber unit 16 ceases transmitting the short code and starts transmitting an access code.* The subscriber unit 16 initiates a slow ramp-up of transmit power while sending the access code (step 210).... Upon detection of the correct phase of the access code by the base station 14, the base station 14 sends an acknowledgment to the subscriber unit 16 (step 216). *Reception of the*

acknowledgment by the subscriber unit 16 concludes the ramp-up process. A closed loop power control is established, and the subscriber unit 16 continues the call setup process by sending related call setup messages (step 218).

(847 Pat. at 10:23-53.) Furthermore, the access code is sent during initiation of communications (847 Pat. at 6:20-23). Therefore, based on the context of the claims and the disclosure in the common specification, this term should be construed as “sequence of chips or bits of a type different from the first type, not modulated by a data signal, transmitted during power ramp-up to facilitate the initiation of communications.”

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants’ proposed construction rests on wrong assumptions. First, Defendants assume that the only “code of a second type” in the specification is the access code portion transmitted in the second phase of the process depicted in Fig. 7. That is wrong because the “code of a second type” can also be the access code portion transmitted in the third phase of the process with the call setup message, which is transmitted at a constant power level. ’847 Patent at 8:66-9:3 (“the base station 14 transmits an access code detection acknowledgement (step 176) to the subscriber unit 16 which ceases the transmission power increase”); 10:15-18; ’010 Patent at 58:59-62.

Second, Defendants assume that the access code portion transmitted in the second phase of the process depicted in Fig. 7 must be transmitted at increasing power levels. They are wrong because the specification only discloses that it is beneficial, but not required, to increase power during this transmission. ’847 Patent at 8:41-42 (“The ramp-up rate with the access code is *preferably* 0.05 dB per millisecond.”) Therefore, such power ramping cannot be imported into the claim. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005).

4. Defendants’ Sur-Reply

The “code of a second type” cannot be “the access code portion transmitted in the third phase of the process [depicted in Fig. 7] with the call setup message,” and the “[access] signal” cannot include a call setup message, as InterDigital suggests. The common specification states

that when the subscriber unit receives the access code detection acknowledgement, it stops increasing the power and stops transmitting the access code (*see* Fig. 7 at $t_{A,A}$; Fig. 6B at 178). Only with power ramp-up complete does closed loop power control and call setup signaling begin (*see* 9:4-6; Fig. 6B at 180). In other words, the subscriber unit stops transmitting the access code *before* it begins transmitting the call setup messages.

Nor does the specification disclose that increasing power during transmission of the access code is merely beneficial. InterDigital relies on the statement in the specification that “[t]he ramp-up rate with the access code is preferably 0.05 dB per millisecond” (847 Pat. at 8:41-42), but such an interpretation strains credulity. The *particular rate* might be a mere preference, but a ramp-up of the power level is a requirement of the invention.

IV. ’847 Patent: “access signal” (claims 6, 9, 11)

1. Plaintiffs’ Opening Position

This is another term that requires no construction because it is made up of words that have ordinary meanings that do not require construction. But if the Court determines a construction is necessary, it should construe the term as “a signal for gaining access to a communication channel” where “signal” means “a measurable quantity (e.g., a voltage) which varies in time in order to transmit information.”⁵ *See* ’847 at Claims 6, 9, 11.

Throughout the claims, the “access signal” is a signal that is used “for gaining access to a communication channel” between a base station and a subscriber unit. *See* ’847 at Claim 11 (“A subscriber unit for performing an access procedure for establishing *communications between* said subscriber unit and a base station, said subscriber unit comprising: ... processor further configured to control the transmitter ... the transmitter transmits ... an *access signal* to facilitate communication initialization *between* said subscriber unit and said base station.”); *see also id.* at

⁵ Ex. 2, Webster’s Third New Int’l Dictionary at 2115 (2002) (defining “signal” as “9: ... c: a detectable physical quantity or impulse (as a voltage, current, magnetic field strength) by which messages or information can be transmitted”); *see also* Ex. 1., IEEE Standard Dictionary of Electrical and Electronic Terms at 988 (6th ed. 1996) (defining “signal” as “(14) In networking, an electrical pulse that conveys information through a transmission medium”).

3:37-40 (“[I]t is *an object* of the present invention to provide an improved technique ... establishment of a *communication channel between* a CDMA subscriber unit and base station.”).

2. Defendants’ Answering Response

Like the phrase “code of a second type,” the term “access signal” should be construed to mean “sequence of chips or bits, not modulated by a data signal, transmitted during power ramp-up to facilitate the initiation of communications.” Read in context, a person of ordinary skill would understand that the PRU Patent claims use these two phrases interchangeably, and they should be given the same meaning.

In particular, claims 6, 9, and 11 of the 847 Patent require that the “access signal” is transmitted in response to receipt of the acknowledgement that the base station has received a code. Thus, the “access signal” corresponds to the “access code” that is transmitted (by itself) during the power ramp-up process until it is detected by the base station, as disclosed in the common specification (*see, e.g.*, 847 Pat. at Fig. 7, 7:15-25). Moreover, claim 11, which InterDigital cites as intrinsic evidence in its brief, as well as claims 6 and 9 of the 847 Patent further support Defendants’ construction because they recite that the “access signal” is a signal that is used “to *facilitate communication initialization* between said subscriber unit and said base station.” Thus, unlike InterDigital’s construction that occurs in a vacuum where the specification is simply ignored, Defendants construction is consistent with what the inventors actually invented and disclosed.

Further, Defendants’ construction is consistent with the construction adopted by ALJ Luckern in the 613 investigation for the term “access signal” in claims 6, 9 and 11 of the 847 Patent (Ex. 22 (337-TA-613 ID) at 43 (construing “access signal” as “a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications.”)).

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants incorrectly assert that the claimed “access signal” “corresponds to the ‘access code’ that is transmitted (by itself) during the power ramp-up process.” (Def. Br. at 6.) In fact, it refers to the signal that “facilitates communication initialization” as specified in the claims. Thus,

in Figure 7, it includes a call setup signal (i.e., the message requesting channel assignment) transmitted immediately after the portion of the access code transmitted alone in phase 2. And the specification does not require that the naked access code portion, or the access code portion transmitted with the call setup message, be transmitted “during power ramp-up.” Indeed, the specification describes transmitting the call setup signal of phase 3 at a constant power level. ’847 Patent at 8:66-9:3; 10:15-18; ’010 at 58:59-62.

4. Defendants’ Sur-Reply

The “code of a second type” cannot be “the access code portion transmitted in the third phase of the process [depicted in Fig. 7] with the call setup message,” and the “[access] signal” cannot include a call setup message, as InterDigital suggests. The common specification states that when the subscriber unit receives the access code detection acknowledgement, it stops increasing the power and stops transmitting the access code (*see* Fig. 7 at $t_{A,\Delta}$; Fig. 6B at 178). Only with power ramp-up complete does closed loop power control and call setup signaling begin (*see* 9:4-6; Fig. 6B at 180). In other words, the subscriber unit stops transmitting the access code *before* it begins transmitting the call setup messages.

Nor does the specification disclose that increasing power during transmission of the access code is merely beneficial. InterDigital relies on the statement in the specification that “[t]he ramp-up rate with the access code is preferably 0.05 dB per millisecond” (847 Pat. at 8:41-42), but such an interpretation strains credulity. The *particular rate* might be a mere preference, but a ramp-up of the power level is a requirement of the invention.

V. '847 Patent: “associated with the same or different code” (claims 7, 10)

1. Plaintiffs’ Opening Position

This is another term that needs no construction because other than the term “code,” it is composed of readily understood words. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (noting that the Federal Circuit “has repeatedly held that a district court is not obligated to construe terms with ordinary meanings, lest trial courts be inundated with requests to parse the meaning of every word in the asserted claims.”). If construed, however, it should be given its ordinary meaning: “related to the same or different code.” Such a construction is supported by the specification and claims. *See, e.g.*, '847 at Claim 7 (“the paging message being *associated with* the subscriber unit”), Claim 1 (“a base station *associated with* a CDMA network”), 4:32-37 (explaining that base station provides “signaling *associated with* establishing and maintain all of the wireless communications).

2. Defendants’ Answering Response

Consistent with the intrinsic evidence, this rather abstract phrase should be interpreted to mean that “the shorter of the related codes [*i.e.*, the same or different codes in claims 7 and 10] is a portion of the longer related codes [*i.e.*, the second code in claims 7 and 10].” In claims 7 and 10, this phrase defines the relationship between the “same or different code” and the “second code.” Given the inherent ambiguity of these generic terms, the claims must be read in light of the supporting disclosure. The “same or different code” recited in the claims corresponds to the short codes described in the specification (847 Pat. at 9:14-28). Similarly, the recited “second code” corresponds to the disclosed access code (*Id.* at 9:54-57; Ex. 21 (010 Pat.) at 57:44-49). The only relationship between these codes, as described in the specification, is that the short code is synchronized with and is shorter than the access code (847 Pat. at 7:41-49, 8:5-20, 9:14-28, Fig. 8; Ex. 21 (010 Pat.) at Table 5a). Based on this disclosure, ALJ Luckern concluded that the short code must be a portion of the access code (Ex. 22 (337-TA-613 ID) at 49 (quoting 010 Patent at 19:31-32) (“a long code may be constructed from two or more short codes”)). Thus, to give meaning to the abstract phrase “associated with the same or different code” in the PRU

Patent claims, it should be construed such that “the shorter of the related codes is a portion of the longer related codes.”

InterDigital attempts to give this term an unreasonably broad meaning irrespective of what the intrinsic evidence actually discloses. This is improper. *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1378 (Fed. Cir. 2006) (holding that the district court erred in its claim construction because it “place[d] too much emphasis on the ordinary meaning of [the claim term] without adequate grounding of that term within the context of the specification of the [asserted patent].”). While InterDigital cites to several instances where the word “associated” appears in the specification and the claims, none of them are relevant in the context of a second code that is “associated with the same or different code.”

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants improperly seek to limit the claimed association to *one* disclosed embodiment. Tellingly, Defendants mischaracterize ALJ Luckern’s statement that “a long code may be constructed from two or more short codes.” (Def. Br. at 7.) Indeed, the patents disclose a preferred embodiment in which the short codes are not portions of the code transmitted after the acknowledgement. Those short codes are generated from *earlier* portions of the access code. ’847 Patent at 9:21-23 (“A symbol length portion from the *beginning* of the spreading code is stored and used as the short code for the next 3 milliseconds.”). Further, the patents disclose an embodiment in which “[t]he short codes are generated from a regular length spreading code.” *Id.* at 9:20-21. If a regular length spreading code other than an access code is used, then the short codes cannot be limited to portions of the access code.

4. Defendants’ Sur-Reply

VI. ’847 Patent: “first power level” (claims 7, 10)

1. Plaintiffs’ Opening Position

The term “first power level” does not need construction because it is a phrase consisting of three well known and understood terms, “first,” “power,” and “level.” If it is construed, it should be given its plain meaning—“power level at which the first code is transmitted.”

The claim language supports the plain meaning. The phrase “first power level” precedes the “increasing power levels” that follow in “subsequent[]” transmissions.” See ’847 at Claim 7. This matches the well-known meaning of “first”: “(1) being number one in a countable series ... : beginning a series” or “before any or some other person or thing (as in time, space, rank, or importance) : as the first thing to be mentioned : to begin with.” See Ex. 2, Webster’s Third New Int’l Dictionary at 856 (2002).

The specification confirms that the “first power level” is just that—the power level at which the first code is transmitted. See ’847 at 7:65-67 (“the subscriber unit 16 *starts transmitting a short code* at the minimum power level”). In addition, the ’010 patent that is incorporated by reference into the ’847 specification⁶ further confirms this understanding: “The SU *starts* from very low transmit power and increases its power level while transmitting the short code SAXPT” (’010 at 58:52-55). Other intrinsic evidence, found in the parent application file history, also supports this construction: “The power level of the *initial* random access message from the mobile station 10 is set by the power controller 118 at a low power level.” NK868ITCSG000031057⁷ at 31446 (EP 0 5650507 A2 at p. 6, ll. 34-35).

2. Defendants’ Answering Response

In the context of the claimed power ramp up procedure, this phrase should be construed to mean “a power level lower than the minimum power level required for communicating with the base station.” The common specification makes it clear that the subscriber unit must begin transmitting short codes at a power level lower than the required power level for detection by the

⁶ See *Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003) (“Our cases also establish that prior art cited in a patent or cited in the prosecution history of the patent constitutes intrinsic evidence”).

⁷ This is a reference from the file history of United States Patent No. 5,841,768, the parent application of both the ’847 and the ’966. See *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1368 (Fed. Cir. 2007) (holding that prosecution history of parent application is intrinsic evidence).

base station so as to reduce interference (847 Pat. at Abstract, 3:23-30, 6:1-6, 7:11-21, 7:65-8:4, 10:26-36; Ex. 21 (010 Pat.) at 58:53-55).

Again, InterDigital offers an unreasonably broad meaning without regard for the alleged invention disclosed and claimed. While it is undisputed that the claims require transmitting the first code at the first power level, the claims also require subsequently transmitting the first code (or a different code) at increasing power levels until an acknowledgment of receipt is received (847 Pat. at Claims 7 and 10). Therefore, the first power level must be lower than the power level required for detection of the subsequently transmitted codes.

3. Plaintiff's Reply to Defendants' Answering Response

Again, Defendants attempt to limit the claims to an embodiment; this would be wrong even if it were the only embodiment. *Phillips*, 415 F.3d at 1323. And here, the specification discloses other examples in which the first power level is not “a power level lower than the minimum power level required for communicating with the base station.” *See, e.g.*, '847 Patent at 7:66-8:1 (“start[] transmitting a short code at the minimum power level P_0 (step 158) and continuously increases the transmission power”); Fig. 6A. The claim language should not be rewritten. Instead, its plain meaning should be adopted.

4. Defendants' Sur-Reply

The specification does not disclose any examples in which the first power level is not “a power level lower than the minimum power level required for communicating with the base station.” The specification unambiguously states that the minimum power level P_0 “is guaranteed to be less than the required power” (847 Pat. at 10:26-36).

VII. '847 Patent: “[re-]synchronize[d/ing] to the/a pilot signal” (claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)

1. Plaintiffs' Opening Position

This term should be construed as “[re-]establish[ed/ing] a timing reference with the/a pilot signal transmitted by said base station.” This is how the term is used in the claims and specification. It is also the term's ordinary and customary meaning in the field. *See* '847 at

Claims 5, 6, 9, and 11; 5:5-32, 5:51-56, 7:59-64, 9:62-10:9, 10:19-22; Figs. 3-4, 6a; *see also* Ex. 1, IEEE Standard Dictionary of Electrical and Electronic Terms at 1075 (6th ed. 1996) (defining “synchronizing signal” as “(4) (telecommunications) A special signal which may be sent to establish or maintain a fixed relationship in synchronous systems”); *see, e.g.*, Ex. 3, Newton’s Telecom Dictionary at 874 (22d Ed. 2006) (defining “synchronous” as “[t]he condition that occurs when two events happen in a specific *time relationship with each other*.”).

Nothing in the claims requires that the synchronization or re-synchronization be accomplished in a specific manner. All that is required is synchronization or re-synchronization, *i.e.*, the establishment of a timing reference to coordinate activity. *See* ’847 at Claims 5, 6, 9, and 11. Indeed, the specification discusses synchronizing various circuitry in a subscriber unit by “adjust[ing] the [timing] by the pilot code detector 80 through the acquisition process.” *See* ’847 at 10:19-22.

2. Defendants’ Answering Response

This phrase should be construed to mean “to [re-]align the beginning of the subscriber unit’s signals to the beginning of a pilot signal.” The common specification discloses only one way to achieve synchronization at the subscriber unit, which is by aligning the beginning of receive and transmit spreading codes to the beginning of the pilot code (847 Pat. at 5:16-21, 5:22-32, 5:34-50, 6:51-56, 7:59-64, Fig. 4, Fig. 6A). Notably, in the parallel 868 Investigation, InterDigital has adopted Defendants’ proposed construction for this phrase (Ex. 23 (Ltr from D. Chang to Respondents’ Counsel re Random Access Disputed Terms)).

3. Plaintiff’s Reply to Defendants’ Answering Response

In its reply brief, InterDigital adopted Defendants’ proposed construction after Defendants said synchronization under their construction is “aligning the beginning of a receive *or* transmit spreading code.”⁸ Although Defendants have claimed this was a mistake (*see* Dkt. No. 128),

⁸ All emphasis added unless otherwise noted.

InterDigital continues to adopt Defendants' original proposed construction according to its plain meaning, not as modified to require that both receive *and* transmit signals be aligned.

The plain meaning of the agreed construction should be adopted. Respondents in the 613 Investigation also argued that synchronization is alignment of both the "*receive and transmit* spreading codes." ALJ Luckern rejected this construction, finding that "the language of the asserted claims ... discloses that synchronization is referred to only in terms of the receiver, or synchronization between the receiver and the received pilot code." Ex. 22 (613 ID) at 80-81. As shown below, ALJ Luckern construed "synchronize" as "to align the beginning of the subscriber unit's spreading codes to the beginning of a pilot code." *Id.* at 79.

Respondents' Proposed Construction (613 Investigation) ⁹	ALJ Luckern's Construction (613 Investigation) ¹⁰	Defendants' Original Construction	Defendants' Modified Construction
to align the beginning of the subscriber unit's <i>receive and transmit</i> spreading codes to the beginning of a pilot code	to align the beginning of the subscriber unit's spreading codes to the beginning of a pilot code.	to align the beginning of the subscriber unit's signals to the beginning of a pilot signal	to align the beginning of the subscriber unit's <i>receive and transmit</i> signals to the beginning of a pilot signal

Defendants contend that "the common specification discloses only one way to achieve synchronization at the subscriber unit, which is by aligning the beginning of *receive and transmit* spreading codes to the beginning of the pilot code."¹¹ Def. Answer Br. at 8. Defendants are wrong for the same reasons ALJ Luckern rejected the respondents' construction in the 613

⁹ Ex. 22 (613 ID) at 73-74.

¹⁰ Ex. 22 (613 ID) at 79.

¹¹ Defendants appear to be partially quoting from page 78 of ALJ Luckern's Initial Determination. But that is an obvious typographical error in view of the preceding sentence (stating that the specification "disclose[s] that the receiver is synchronized to the received signal, and *do not mention the transmitter of the subscriber unit*") as well as the discussion on pages 76 ("common specification discloses that synchronization is aligning the beginning of a receive *or* transmit spreading code") and 80 ("Synchronizing to the pilot code could refer to *either* a receive *or* transmit spreading code, as found, *supra*").

Investigation. In particular, the '847 patent discloses that synchronization can occur on the receive side alone. *See* Ex. 22 (613 ID) at 76 (“Thus, the common specification discloses that synchronization is aligning the beginning of a receive *or* transmit spreading code to the beginning of the pilot code.”) (citing '847 patent at 5:4-67), 80 (“Synchronizing to the pilot code could refer to either a receive *or* transmit spreading code.”). For example, the '847 patent discloses that “when a call is not in progress or pending,” i.e., when nothing is being transmitted, “the subscriber unit 16 remains synchronized to the base station 14 by periodically reacquiring the pilot code 40 [in order to] receive and demodulate any downlink transmissions” '847 patent at 5:51-55. And as ALJ Luckern noted, “the language of the asserted claims ... discloses that synchronization is referred to only in terms of the receiver, or synchronization between the receiver and the received pilot code.” Ex. 22 (613 ID) at 80-81; *see also* '847 patent at 11:57-60 (“if the circuit becomes unsynchronized to the pilot signal during an idle period ... the circuit is further configured to re-synchronize to the pilot signal.”); 12:39-41.

Defendants' original proposed construction should thus be adopted, and Defendants' modified construction should be rejected. *See* Ex. 22 (613 ID) at 81 (“[ALJ] rejects respondents' argument, as respondents appear to be importing language from other elements of the asserted claim into the claimed synchronization terms.”).

4. Defendants' Sur-Reply

InterDigital made a capital case out of Defendants' reasonable request to correct a typo in their answering claim construction brief, demanding two additional pages of briefing to address the correction. It is now clear why: InterDigital needed those pages to manufacture a story about how Defendants have changed their claim construction. The story is fiction, plain and simple.

Defendants' proposed construction of these terms always has been and remains “to align the beginning of *the subscriber unit's signals* to the beginning of a pilot signal.” Defendants have *never* argued that these terms involve alignment of only “a receive *or* transmit spreading code.” As InterDigital is well aware, throughout both the 868 Investigation and this case, Defendants have maintained that synchronization “of the subscriber unit's signals” includes both

receive *and* transmit spreading codes. Defendants' answering brief included the typo in a sentence summarizing the common specification. The corrected version of that sentence, included in this joint brief, states the unambiguous truth: "The common specification discloses only one way to achieve synchronization at the subscriber unit, which is by aligning the beginning of receive *and* transmit spreading codes to the beginning of a pilot code."

Indeed, the common specification calls alignment of the *receive* codes "acquisition." (847 Pat. at 5:16-18.) In the very next paragraph, the specification describes synchronization as aligning the transmit codes and refers to both as "*this* receive *and* transmit synchronization." (*Id.* at 5:22-25). Thus, synchronization is complete only when *both* locally generated spreading codes—the subscriber unit's receive and transmit codes—are aligned with the received pilot code. InterDigital's examples are consistent and do not limit synchronization to receive codes.

Perhaps most important, the claims confirm that Defendants' construction is correct. The whole point of this invention is to set the subscriber unit's *transmission* power level. For example, claim 3 of the 847 first recites "a circuit configured to synchronize . . ." and then recites "a transmitter" that "successively transmits signals." (847 Pat. at 11:55-63.) It would be nonsensical to suggest that synchronization in this claim does not involve the subscriber unit's transmit spreading codes. The now-agreed construction refers to alignment of "the subscriber unit's signals," which properly captures both receive *and* transmit spreading codes.

VIII. '847 Patent: "circuit" (claims 1, 2, 3, 4, 5, 10, 11)

1. Plaintiffs' Opening Position

Circuit is a term that requires no special or judicial construction. If it is construed, it should be construed in accordance with its ordinary and customary meaning: "electronic components that may include digital circuitry, analog circuitry, software, firmware, or a combination of these elements." *See* Ex. 1, IEEE Standard Dictionary of Electrical and Electronic Terms at 156 (6th ed. 1996) (defining "circuit" as "(7) (A) An arrangement of interconnected components ... (B) An arrangement of interconnected electronic components that can perform specific functions upon application of proper voltages and signals").

The use of the word in the claims and specification confirm this ordinary and customary meaning of circuit. *See* '847 at Claims 3, 5; 9:62-10:22; Fig. 10. For example, in Claim 3 the claimed “circuit” is “configured to synchronize to a pilot signal,” and to “re-synchronize to the pilot signal.” There is no further limitation in the claims or specification indicating that the circuit must be composed of certain types of components, *e.g.*, hardware, or that limits the method of configuring it. *See id.* at 9:62-10:22 (describing the various circuitry found in an embodiment of a subscriber unit in accordance with the invention, but not requiring that the embodiment implement or configure that circuitry in any particular way).

2. Defendants’ Answering Response

In the context of the larger phrase “circuit [further] configured to,” this term should be construed to mean “arrangement of electrical components [further] configured, without the use of software, to.” The ordinary and customary meaning of “circuit” is limited to hardware and excludes software. This is consistent with the IEEE dictionary definition InterDigital cited in its opening brief.

The PRU Patents do not use or redefine the term “circuit” differently from its ordinary and customary meaning. Indeed, the 010 Patent consistently uses “circuit” to refer to hardware devices (*see generally* Ex. 21 (010 Pat.) at FIG. 2b, FIG. 5a, FIG. 6, FIG. 7, 21:17-18, 21:64-65, 30:33-35, 30:61, 33:8-10, 33:29-33). When the 010 Patent describes a device with software, it avoids the term “circuit” in favor of the terms “processor,” “microprocessor,” “Flash Prom,” or “modem controller” (*see* Ex. 21 (010 Pat.) at 39:17-20, 45:4-8, 39:60-63, 54:12-16). Therefore, “circuit” should not be construed to include software.

3. Plaintiff’s Reply to Defendants’ Answering Response

Apart from the phrase “without the use of software,” Defendants’ construction is essentially the same as InterDigital’s: “an arrangement of electrical components.” The dispute is thus over the phrase “configured to.” Defendants construe this phrase as “configured, without the use of software, to.” But the “circuit” excerpts cited by Defendants say nothing about whether or not the “circuit” is configured by software, much less that the “circuit” cannot be configured by

software. Indeed whether and how much software is used is a matter of design choice dictated by such factors as cost, physical space, memory space, etc. Defendants in fact acknowledge that the patents describe circuits that do contain software, such as processors, microprocessors, and modem controllers. Defendants construction should be rejected.

4. Defendants' Sur-Reply

IX. '847 Patent: "transmitting/transmit ... a signal by said subscriber unit as part of the access procedure" (claims 7, 10)

1. Plaintiffs' Opening Position

This is another term that is composed of easily understood terms. It needs no construction. But if construed, it should have its plain meaning: "transmitting/transmit ... a signal by said subscriber unit during the access procedure." To be a "part" of a procedure is to occur during that procedure because it is a "portion" of it. *See* Ex. 2, Webster's Third New Int'l Dictionary at 1645 (2002) (defining "part" as "1 a (1): one of the equal or unequal portions into which something is or is regarded as divided : something less than a whole").

There is nothing in the language of the claims that departs from this plain meaning. *See* '847 at Claim 7 ("A method for performing *an access procedure* in a code division multiple access subscriber unit *for establishing communications* transmitting, in response to receipt of said acknowledgment, a signal by said subscriber unit as part of the access procedure ..."). The term is used in claim limitations throughout the patent that are steps in or apparatuses capable of performing an *access procedure*. *See* '847 at Claims 7, 10. This is consistent with its usage in the specification. *See* '847 at Title ("Method And Apparatus For Performing An Access Procedure"), Figs. 11A to 11B ("the subscriber unit continues the call setup process by sending related call setup messages"), Figs. 4, 6A, 6B; 3:54-56, 3:59-62, 4:3-5.

2. Defendants' Answering Response

Similar to the terms "code of a second type" and "access signal," this term should be construed to mean "transmitting ... a sequence of chips or bits, not modulated by data, during power ramp-up to facilitate the initiation of communications." In the context of the claim

language, this signal is transmitted by the subscriber unit as part of the access procedure in response to receipt of the acknowledgement indicating that the base station has detected transmission by the subscriber unit of a code (847 Pat. at claims 7 and 10). Again, the only disclosure in the common specification corresponding to this term is the “access code” that is transmitted by itself (*i.e.*, not modulated by data) during the power ramp-up process until it is detected by the base station, as disclosed in the common specification (847 Pat. at Figs. 5 and 7, 6:20-23, 10:23-53; Ex. 21 (010 Pat.) at 12:1-4).

3. Plaintiff’s Reply to Defendants’ Answering Response

As discussed above with respect to the “code of a second type” and “access signal” terms, the patents disclose an embodiment in which the signal for gaining access is not transmitted “during power ramp-up.” In particular, the access signal includes the call setup signal sent in step 3 which is transmitted at a constant power level, and not during power ramp-up. Further, the access code portion of step 2 can also be transmitted at a constant power level. Defendants’ construction is therefore improper.

4. Defendants’ Sur-Reply

The “code of a second type” cannot be “the access code portion transmitted in the third phase of the process [depicted in Fig. 7] with the call setup message,” and the “[access] signal” cannot include a call setup message, as InterDigital suggests. The common specification states that when the subscriber unit receives the access code detection acknowledgement, it stops increasing the power and stops transmitting the access code (*see* Fig. 7 at $t_{A,A}$; Fig. 6B at 178). Only with power ramp-up complete does closed loop power control and call setup signaling begin (*see* 9:4-6; Fig. 6B at 180). In other words, the subscriber unit stops transmitting the access code *before* it begins transmitting the call setup messages.

Nor does the specification disclose that increasing power during transmission of the access code is merely beneficial. InterDigital relies on the statement in the specification that “[t]he ramp-up rate with the access code is preferably 0.05 dB per millisecond” (847 Pat. at 8:41-

42), but such an interpretation strains credulity. The *particular rate* might be a mere preference, but a ramp-up of the power level is a requirement of the invention.

X. '847 Patent: “subsequently transmit[ting], with respect to said first code a same or a different code, at increasing power levels” (claims 7, 10)

1. Plaintiffs’ Opening Position

This term does not need construction because it is composed of both easily understood words and terms this Court is already being asked to construe. If construed, it should be given its plain meaning: “transmitting later in time a same or a different code with respect to said first code at a higher power level than that of said first code.” This is confirmed by the claim language. For example, Claim 7 uses the word “subsequently” in reference to “said first code,” which is the “first code” transmitted “at a first power level.” Therefore, the claim requires transmitting “a same or a different code” “following in time” after the transmission of the “first code.” *See* Ex. 2, Webster’s Third New Int’l Dictionary at 2278 (2002).

In addition, “increasing” is a well-known terms that does not require specialized construction. It simply means “becoming progressively greater.” *See id.* at 1146. Nothing in the claims or specification expressly limit or define “increasing” to a particular type of increasing. *See* '847 at Claims 7, 10; 7:65-8:1 (“subscriber unit 16 starts transmitting a short code at the minimum power level ... and continuously increases the transmission power level while retransmitting the short code”); *see also InterDigital Commc’ns*, 690 F.3d at 1327-28 (construing similar “increased power level” term in the '966 as allowing for “both intermittent and continuous increases in power”).

2. Defendants’ Answering Response

Other than the phrase “at increasing power levels,” Defendants agree with InterDigital that this term is composed of easily understood words. Defendants simply seek to clarify that the increase may be either continuous or stepwise. Accordingly, this phrase should be construed to mean “subsequently [transmit/transmitting], with respect to said first code a same or a different

code, the power level increasing continuously or stepwise during transmission of the same or different code.”

The Federal Circuit has held that the similar phrase “increased power level” in claim 5 of the 847 Patent should be construed as “to include both intermittent and continuous increases in power.” *InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1325, 1328 (Fed. Cir. 2012). The Federal Circuit found that the plain claim language covers both continuous and stepped power increases. Likewise, the phrase “at increasing power levels” should be construed to include a power level increasing continuously or stepwise during transmission of the same or different code.

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants wrongly assert that their construction merely clarifies that the power level increase may be continuous or stepwise. But Defendants’ construction actually requires that the power level increase *during* the transmission of each subsequently transmitted code. This improperly excludes transmissions of codes at increasing power levels where the power level is constant during transmission of any particular code.

Defendants’ reliance on the Federal Circuit’s opinion is misplaced. The Federal Circuit rejected the argument that similar claim terms require power level increases *during* transmission. *InterDigital Commc’ns, LLC v. ITC*, 690 F.3d 1318, 1328 (Fed. Cir. 2012) (“[T]he use of the term ‘continuously’ does not mandate the interpretation that the power increases must continue even during transmissions”).

4. Defendants’ Sur-Reply

Defendants’ construction does not require power increases “during the transmission of *each* subsequently transmitted code.” Defendants have only interpreted this phrase to mean that the power increases continuously or stepwise “during transmission of the same or different code,” meaning during signal transmission in the ramp-up phase. *See InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1328 (Fed. Cir. 2012) (“The common specification discloses embodiments in which power increases occur during signal transmission.”) Indeed, it is

InterDigital that seeks to sidestep the Federal Circuit's findings with a construction that covers no power increases so long as the power of all subsequently transmitted codes is higher than that of the first code. Nothing in the intrinsic evidence supports InterDigital's construction.

XI. '847 Patent: "periodically" (claim 1)

1. Plaintiffs' Opening Position

This term is used in accordance with its plain meaning, there is nothing in the patent that defines this term in any way that departs from its customary meaning: "intermittently." *See* Ex. 2, Webster's Third New Int'l Dictionary at 1680 (2002) (defining "periodic" as "1 a: characterized by periods : occurring at regular intervals <~phases of the moon>... b: occurring repeatedly from time to time : RECURRENT, INTERMITTENT); *see also id.* (defining "periodically" as "1: at regular intervals of time 2: from time to time").

There is nothing in the claim language that indicates that the term should be understood in a manner that differs or limits its plain meaning. *See* '847 at Claim 1 ("the circuit is further configured to remain synchronized to the pilot signal by periodically acquiring the pilot signal"). Moreover, nothing in the specification limits the plain meaning of "periodically." *See id.* at 6:51-54 (During idle periods, the pilot code 40 from the base station 14 is received at the subscriber unit 16 which periodically synchronizes its transmit spreading code generator thereto").

2. Defendants' Answering Response

This term should be construed to mean "at a fixed interval." This is consistent with claim language, the specification, the plain meaning of the term, and the first dictionary definition InterDigital provided in its opening brief (defining "periodic" as "1 a: characterized by periods : occurring at regular intervals <~phases of the moon>").

3. Plaintiff's Reply to Defendants' Answering Response

Apart from the unsupported assertion that their construction is consistent with the intrinsic evidence, Defendants wrongly assert that the dictionary definition "regular intervals" <~phases of the moon>" supports their construction of "fixed intervals." It does not. *See, e.g.,* Ex. 2, Webster's Third New Int'l Dictionary at 1680. For example, the time between new moons

for September to October 2013 was 30 days, but the period between them for October to November 2013 is 29 days, *i.e.*, regular not fixed. Ex. 13, Naval Observatory New Moon Data. Defendants' construction thus lacks support in both the intrinsic and extrinsic evidence. It should be rejected.

4. Defendants' Sur-Reply

XII. '966 and '847 Patents: "generated using [a same / a portion of a / a remainder of the] code" ('966 claim 1; '847 claims 3, 5); "function of a same code" ('847 claim 6, 9, 11)

1. Plaintiffs' Opening Position

These "generated" and "function" terms can all be construed as "produced from [a same / a portion of a / a remainder of the] code" because both "generated using" and "function of," according to their ordinary and customary meaning, relate to producing something based on inputs. *See* Ex. 4, IDC868ITC60000728-35 (1995 Webster's II New College Dictionary) at 465 ("Generate" means "1. To bring into existence : PRODUCE."); *see also* Ex. 5, IDC868ITC60000723-27 (1997 Webster's American Dictionary) at 337 ("Generate" means "1. to bring into existence; originate; produce[.]"); *see, e.g.*, Ex. 2, Webster's Third New Int'l Dictionary at 921 (2002) (defining "function" as "7: any quality, trait, or fact so related to another that it is dependent upon and varies with it ... 8 a: an expression which contains a variable term and whose meaning or truth is determined when concrete values of the variable are specified"). This meaning is reinforced throughout the claims and the specification of the '847 and '966. *See* '847 at p. 2 (citing '010), Claims 3, 5; *see also* '966 at p. 2 (citing '010), Claim 1.

For example, neither the claims nor specification limits "generated" or "function of" to any novel or unique understanding of those terms. *See* '847 at Claims 3, 5; '966 at Claim 1; *see also Virginia Panel*, 133 F.3d at 866 ("[W]ithout an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.") (citation omitted).

2. Defendants' Answering Response

Throughout the PRU Patents, InterDigital has recited the generation of short codes using a variety of different language (*e.g.*, codes or successively transmitted signals), but it all boils down to the same core requirement: each short code must be *selected from* a regular length spreading code. The common specification explains that the short codes are “dynamically *selected*” and “generated from a regular length spreading code” (847 Pat. at 9:16-21). The PRU Patents do not disclose any other way of generating a short code. Therefore, these “generated using” and “function of” phrases should be interpreted to mean “selected from [a same / a portion of a / a remainder of the] code.”

Given that the PRU Patents teach only one way of generating a short code, InterDigital's proposed construction of “produced using ...” is unreasonably broad and unsupported by the common specification.

3. Plaintiff's Reply to Defendants' Answering Response

Defendants incorrectly assert that the common specification discloses only one way of generating a *short code*. They also ignore that claim 5 requires a “message” requesting assignment of a channel to be “generated using a same code,” and claims 6, 9 and 11 require an “access signal to facilitate initialization of communications” (which, as discussed above, includes a “message”) to be “a function of” a same code. Indisputably, a “message” is not merely “selected from” a same code as the short code. Rather, a “message” is generated by combining call-setup data that has been spread using the access channel spreading code (referred to as the AXCH in the '010 patent), with a portion of the access code (referred to as the LAXPT in the '010 patent). '966 Patent at 10:15-29; '010 at 14:52-54 (“The long Access Pilot (LAXPT) is transmitted synchronously with AXCH”).

Further, the specification does not disclose that the short codes must be selected from a regular length spreading code as Defendants contend. *See InterDigital*, 690 F.3d at 1325-26; *see also* Ex. 20 (800 ID) at 32 (rejecting respondents' argument that “‘selected from [a] pre-existing,’ ‘is required by the system disclosed in the Power Ramp-up Patents’” for a related '830 patent).

Indeed, the ALJ in the 613 investigation found that “the specification does not contradict the plain meaning,” and gave the same disputed terms their plain meaning (i.e., “produced from the same code”). (Ex. 22 (613 ID) at 54-55, 57.)

4. Defendants’ Sur-Reply

XIII. ’966 and ’847 Patents: “successively transmits signals” (’966 claim 1; ’847 claims 1, 2, 3, 5); “successively transmitted signals” (’966 claims 1, 8; ’847 claim 5)

1. Plaintiffs’ Opening Position

This term is made of up of well-known terms not requiring construction. But if construed, it should be construed according to its plain meaning: “transmits signals one after the other” and “signals transmitted one after the other,” respectively, where “signal” means “a measurable quantity (*e.g.*, a voltage) which varies in time in order to transmit information.” *See* Ex. 2, Webster’s Third New Int’l Dictionary at 2282 (2002) (defining “successive” as “2 a: following in succession or serial order : following one upon another : coming in order : CONSECUTIVE”); *see also id.* at 2115 (defining “signal” as “9: ... c: a detectable physical quantity or impulse (as a voltage, current, magnetic field strength) by which messages or information can be transmitted”); *see, e.g.*, Ex. 1, IEEE 1996 at 988 (defining “signal” as “(14) In networking, an electrical pulse that conveys information through a transmission medium”).

The use of the terms in the claims confirm this plain and ordinary meaning. For example, in Claim 1 of the ’847 Patent, “the transmitter successively transmits signals,” *i.e.*, transmits signals one after the other. Nothing in the claim language limits how the signal may be modulated or defines a signal as a sequence of chips, let alone one that is not modulated by data. *See, e.g.*, ’847 at Claims 1, 2, 3, 4, 5; *see also, e.g.*, ’966 at Claims 1, 8; *see also InterDigital Commc’ns*, 690 F.3d at 1323-27 (holding that the claim term “code” must not be narrowly construed to only include “spreading code” because the patentees did not expressly limit the broader term).

2. Defendants' Answering Response

These phrases should be interpreted to mean “successively [transmits/transmitted] sequences of chips not modulated by a data signal.” As with the claim term “code,” the parties dispute whether the “successively transmitted signals” as transmitted may be modulated with data. InterDigital would like to interpret these signals more broadly than unmodulated codes, but the common specification of the PRU Patents does not support that interpretation.

These successively transmitted signals correspond to the short codes, and the specification expressly states that short codes are not intended to and do not carry data (847 Pat. at 7:41-49; Ex. 21 (010 Pat.) at 44:3-7). As noted above, the Federal Circuit specifically cited this disclosure in the appeal of the 613 Investigation. *InterDigital*, 690 F.3d at 1325-26 (“As noted, the specification describes various codes, such as pilot codes and short codes, as ‘spreading codes’ even though they carry no data and are not intended to do so.”). As also noted above, the PRU Patents disclose that any data transmitted before acquisition of the access code would be not be demodulated (*i.e.*, would be lost) and would, instead, simply add unnecessary interference to the system, which is contradictory to the stated goal of minimizing interference (847 Pat. at 2:1-5, 7:44-49, 8:11-13, 8:15-20, 9:14-28, Fig. 8). Because the common specification teaches that the successively transmitted signals, or short codes, should not and do not carry data, and because the specification provides no disclosure that would teach one of ordinary skill in the art how the invention would work if those signals did carry data, these phrases should be interpreted to mean “successively [transmits/transmitted] sequences of chips not modulated by a data signal.”

Like their construction of “code,” Defendants’ construction of “successively [transmits/transmitted] signals” is also consistent with ALJ Shaw’s recent decision in the 800 Investigation. Evaluating the 830 and 636 Patents, ALJ Shaw concluded that their common specification discloses “that the codes successively transmitted during the random access process (*i.e.*, the short codes) are neither modulated with data, nor used to modulate data.... In other

words, the ‘codes’ themselves are what are successively transmitted, not codes modulated with data.” (Ex. 20 (337-TA-800 ID) at 24) (citing to *InterDigital*, 690 F.3d at 1326).¹²

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants argue that the specification discloses an embodiment cited by the Federal Circuit where short codes do not carry data. But this ignores the Federal Circuit’s express guidance that the plain meaning rule applies unless the patent or file history gives the term a special definition, or contains a clear and unambiguous disclaimer. Defendants cannot (and do not attempt to) show that the asserted patents or file histories contain any such definition or disclaimer. Defendants’ attempt to limit the claims to a single embodiment should thus be rejected.

Defendants also argue that if short codes were modulated by data, the system would not work and the data would only add unnecessary interference to the system. This argument fails for the same reasons as discussed above. (Ex. 20 (800 ID) at 32.) Nowhere does the specification say that the base station cannot detect modulated codes. Indeed, if this were so, the base station would not be able to detect *any* telephonic data because codes such as spreading codes are used to “encode and decode the data-carrying signal.” *InterDigital*, 690 F.3d at 1320-21.

4. Defendants’ Sur-Reply

Defendants’ construction is consistent with the specification and the Federal Circuit’s opinion. *InterDigital* and its experts have agreed that the only support for the alleged “successively sent transmissions” is the short codes, which are transmitted only as codes, not as modulated data (*see, e.g.*, Ex. 49 (Jackson Tr.) 177:3-9 (agreeing that “the repeated transmissions of the short code are the successively sent transmissions” and that “short codes carry no data”; Ex. 50 (Haas Tr.) at 1825:17-1826:14 (agreeing with the Federal Circuit’s finding that the pilot

¹² As noted above, ALJ Shaw further concluded that if “successively sent transmissions” were interpreted to cover transmission of a code modulated by data (*i.e.*, encoded data), then the claims as so construed would not be supported by the common specification and would be invalid under 35 U.S.C. § 112 for lack of written description. (Ex. 20 (337-TA-800 ID) at 93.)

codes and short codes “carry no data and are not intended to do so”); Ex. 51 (Non-Confidential Br. for Appellants, *InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, No. 2010-1093, 2010 WL 180855) at 18 (“Moreover, both embodiments in the specification disclose “spreading codes” that are not used or intended to be used to increase the bandwidth of another signal.... These “spreading codes” are said to “carry no data” because they are not modulated by data before being transmitted. And because they are not modulated by data, these “spreading codes” are not used or intended to be used to increase the bandwidth of another signal.”).

XIV. ’151 Patent: “[a/the] same physical downlink control channel” (claims 1 and 16)

1. Plaintiffs’ Opening Position

The Court should construe this term to mean “a radio resource used to transmit uplink and/or downlink channel assignment information.” This construction is supported by the plain claim language, which explicitly recites that the WTRU receives “downlink” and/or “uplink channel assignment information via a same physical downlink control channel.” *See, e.g.*, ’151 at claim 1. Moreover, this construction is supported by the specification, which teaches that the “physical downlink control channel” is “a radio resource used to transmit uplink and/or downlink channel assignment information”:

The signaling channel, a high speed shared control channel (HS-SCCH), conveys **radio resource allocation information to a plurality of wireless transmit/receive units (WTRUs).**

...

The WTRU **receives a message from the Node-B via the common control channel.** The message includes an indication of whether **the message is intended for assigning radio resources to the UL channel or the DL channel.** The WTRU determines whether the message is intended for the WTRU and, if so, the WTRU determines whether the message is for assigning radio resources to the UL channel or the DL channel. The WTRU takes an appropriate action based on whether the message is for assigning radio resources to the UL channel or the DL channel.

’151 at 1:33-39; 2:22-31; *see also id.* at Fig. 1; 1:33-39; 2:22-31; 3:15-21; 3:30-32; 3:37-50; and 5:14-16. And both the provisional application for the ’151 patent, the ’049 App., and the ’151 specification similarly refer to the “physical downlink control channel” as “as radio resource”:

In accordance with the present invention, the common control channel 112 is utilized for the transmission of radio resources assignment information for both UL and DL transmissions and a specific indication is provided to distinguish whether the radio resource assignment is for either UL or DL transmission. Therefore, **the common control channel 112 occupies a shared DL radio resource space**, as defined by a set of SF=128 channelization codes, for both DL and UL transmissions simultaneously ...

'151 at 3:40-48;

[0020] ... [T]he HS-SCCH and the UL Resource Assignment Channel occupy a shared DL **radio resource** space. Pursuant to the techniques of the present invention, any of several methods may be employed to distinguish HS-SCCH transmissions from UL Resource Assignment channel transmissions. ...

[0025] ... [A]n HS-SCCH and a UL resource assignment channel are provided in a shared **DL radio resource space**

'049 App. at [0020], [0025]; *see also id.* at [0018], [0026], [0030]. This intrinsic evidence compels adoption of InterDigital's proposed construction.

2. Defendants' Answering Response

This term should be construed to mean "[a/the] channel used for transfer of downlink control information only that occupies a same radio resource defined by a channelization code." This construction differs from InterDigital's construction in three significant ways. *First*, unlike InterDigital's construction, it requires that the channel at issue be the "same physical" channel in that it occupies the same radio resource. The '151 Patent's prosecution history warrants this requirement. During prosecution, the applicants argued that the channel in the claims must be "physical" to distinguish the main reference cited by the examiner ("Du") (Ex. 28 (151 Pat. Pros. Hist., Jan. 29, 2009 Reply) at 2, 5-6 (distinguishing the *broadcast* control channel in Du from the *physical* control channel of the claims)). To further distinguish Du, the applicants later added the modifier "same" to the claim term "physical downlink control channel" and argued that Du failed to disclose uplink and downlink allocations transmitted "via the same physical downlink control channel" (Ex. 29 (151 Pat. Pros. Hist., May 6, 2009 Reply) at 6 (argument); *see also* Ex. 30 (151 Pat. Pros. Hist., Feb. 24, 2011 RCE) (amendment)).

The intrinsic record defines the "same" physical channel as use of the same radio resources for the transmission of uplink and downlink channel assignment information (Ex. 24

(151 Prov.) at ¶ [0018] (the “shortcomings” of the prior art were “resolved by providing a [HS-SCCH] and an uplink (UL) resource assignment channel *in a shared downlink (DL) radio resource space ...*”); *id.* at ¶ [0025] (“Pursuant to the systems and methods of the present invention, an HS-SCCH and a UL resource assignment channel are provided *in a shared DL radio resource space*”); *see also* Ex. 31 (EP04811400.3, Feb. 3, 2011 Submission) at 2 (stating in the prosecution of a European counterpart that “[t]he channel is *physical* since it occupies a shared DL radio resource space”). The specification makes clear that both types of control information are sent on the same physical channel that occupies precisely the same radio resource, and must be distinguished by examining the transmissions themselves (Ex. 24 (151 Prov.) at ¶ [0025] (“Received high speed shared control channel HS-SCCH transmission are rendered distinguishable from UL resource assignment channel transmissions.”); (151 Pat. at 2:23–25) (“The message includes an indication of whether the message is intended for assigning radio resources to the UL channel or the DL channel”). Indeed, reuse of a single physical channel is the entire point of the alleged invention of the 151 Patent.

Second, unlike InterDigital’s construction, Defendants’ construction requires that the same channel be “defined by a channelization code.” The 151 Patent’s specification warrants this requirement because it explicitly ties the “present invention” of the 151 Patent to the WCDMA standard, in which radio resources are defined by a channelization code. As discussed above, HSDPA and Enhanced Uplink were developed for the UMTS WCDMA standard (151 Pat. at 1:24-31; Ex. 24 (151 Prov.) at ¶ [0005]). The “present invention” of the 151 Patent provided for “an HS-SCCH and UL resource assignment channel,” which are WCDMA channels, in a shared DL radio resource space (Ex. 24 (151 Prov.) at ¶ [0025]; *see also id.* at 1 (titled “Extended HS-SCCH for FDD Enhanced UL Operation”); *id.* at ¶ [0003] (“The invention relates generally to wireless communication and, more specifically, to a resource assignment channel for providing enhanced uplink operation”). As the “present invention” required use of a radio resources space for WCDMA channels, the radio resources are defined by a channelization code (*see* 151 Pat. at 1:37-40 (“an HS-SCCH is sent *by means of a spreading factor (SF)=128 channelization code*

...”); Ex. 24 (151 Prov.) at ¶ [0029] (“For an R5 HS-SCCH, the shared radio resource space includes a UE-specific radio resource code”); *see also* Ex. 32 (151 Invention Form) at IDC868ITC60011072 [REDACTED]

[REDACTED] Ex. 33 (Du) at 4:65-67). Because the 151 Patent’s specification imposes this requirement on the “present invention,” and not just on an embodiment, Defendants’ construction correctly includes the requirement “defined by a channelization code.” *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) (“When a patent ... describes the features of ‘the present invention’ as a whole, this description limits the scope of the invention.”).

Third, Defendants’ construction explains what a “control” channel is. The claims require the use of a “downlink control” channel, which is a downlink channel used for transfer of control information instead of user data (*see* Ex. 34 (U.S. Pat. No. 6,882,727) at 8:24 (“control channels are used for transfer of control information only”)).¹³ The “control” channel is distinct from, *e.g.*, the two “shared” channels recited in the claim, which carry user data.

In contrast, InterDigital’s construction eliminates virtually all of the requirements of the disputed term by reading out “same physical” and “downlink control.” InterDigital’s construction does not require the use of a “same” channel for downlink and uplink control information, because it requires only that the mobile device receive “downlink or uplink” channel assignment information via the control channel. InterDigital’s construction also ignores that the channel is a “control” channel, not used for transmission of other data.

Further, InterDigital’s construction is circular: “receiving downlink or uplink channel assignment information via [a radio resource used to transmit uplink and/or downlink channel assignment information].” The addition of “used to transmit uplink and/or downlink channel

¹³ The examiner stated that the 727 Patent “show[ed] the state of the art with respect to channel allocation for up-link and down-link channels” (*see* Ex. 35 (405 Pat. Pros. Hist., Aug. 25, 2005 Non-Final Rejection) at 16).

assignment information” simply repeats the first part of the claim element. InterDigital’s construction requires that the information be received on a “radio resource,” but ignores that the “same” resource must be used to receive two separate kinds of control information. Such a construction cannot be correct.¹⁴

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants misstate the dispute here. InterDigital agrees that the channel at issue must be the “same physical” channel. The phrase “a radio resource” in InterDigital’s proposed construction captures this concept. InterDigital also agrees that the “downlink control channel” is used to transfer control information. InterDigital uses the phrase “downlink channel assignment information” in its proposed construction to capture this concept.

The parties’ actual dispute centers around two other issues. First, Defendants’ proposed construction improperly limits “radio resource” to a “radio resource defined by a channelization code.” Defendants assert that the “present invention” is limited to WCDMA, which uses channelization codes. (*See* Section XIV.2, (“HSDPA and Enhanced Uplink were developed for the UMTS WCDMA standard.”).) They are wrong. The ’151 Patent explicitly states that “[t]he present invention is applicable to *any type* of wireless communication system such as ... CDMA in general *or any other type of wireless communication system.*” ’151 Patent at 3:4–9. Thus, the invention is not limited to channels defined by a channelization code.

Second, the parties dispute the meaning of same “radio resource,” the use of which is required by both proposed constructions. A “radio resource” is simply the means for communicating the control information, an example of which is HS-SCCH used in WCDMA, as Defendants contend. ’151 Patent 1:24-36, 1:66-2:1. HS-SCCH is therefore an example of a “same physical channel.” Yet, when the HS-SCCH is used to communicate control information, the HS-SCCH is transmitted using one of four different possible channelization codes. (*See* Ex.

¹⁴ The error in InterDigital’s construction is further demonstrated by InterDigital’s argument that “radio resources” do not have to be physical resources (*see* Section XVII.1 at 58-59), which would render the term “physical” in the claims meaningless.

14 (3GPP TS 25.308 v 5.2.0) at § 5.2.2.2 (“[T]he UE shall be allocated a set of up to four HS-SCCHs, and shall monitor all of these HS-SCCHs continuously.”).) Furthermore, it is transmitted over three time slots. ¹⁵¹ Patent at 1:37-39. Obviously, control information sent at one time will use different time slots than control information sent at a later time. Thus, the HS-SCCH – the preferred embodiment of the “same physical channel” – uses a radio resource consisting of up to four channelization codes for any single UE, where the code used may vary from one transmission to the next, and three time slots, which are necessarily different from one transmission to the next. Nevertheless, the HS-SCCH is the “same physical channel.”

In more general terms, the preferred embodiment reveals that for any given transmission of control information, varying portions of the same radio resource can be used from transmission to transmission. Based on Defendants’ non-infringement positions, Defendants are attempting to construe the term “same radio resource” to mean that the exact same portion of the resource must always be used, *e.g.*, the same code and the same time period. This construction is inconsistent with how one of ordinary skill in the art understands “same physical ... channel” and “same/a/the radio resource,” and would improperly exclude the preferred embodiment based on HS-SCCH. Thus, it should be rejected.

4. Defendants’ Sur-Reply

InterDigital’s argument—that a single physical channel in the described embodiment maps onto a shifting set of radio resources—is simply wrong as a factual matter. InterDigital states that a single HS-SCCH “uses a radio resource consisting of up to four channelization codes” (quoting 3GPP TS 25.308). But the quoted language states something completely different: that the WTRU will monitor up to *four separate* HS-SCCHs, so each of the four channelization codes is used by one of the monitored HS-SCCHs (*id.* (“[T]he UE shall be allocated a set of up to four HS-SCCHs”)). Each physical channel (HS-SCCH) maps onto a single radio resource—*i.e.*, a channelization code—as Defendants’ construction properly requires (Ex. 15 (Dahlman) at 135 (“each physical channel corresponds to a unique spreading [channelization] code”); 147 (stating that each HS-SCCH is “transmitted in parallel to the HS-

DSCH using a separate channelization code”)). InterDigital’s argument highlights its improper attempt to group multiple radio resources that are used for multiple different channels into a single “same physical channel”—something that is not recited in the claims or described anywhere in the intrinsic record.

InterDigital also argues that the disputed term should not be limited to a radio resource defined by a channelization code because the 151 Patent is applicable to other wireless systems. But every system actually listed in the 151 Patent uses CDMA technology, whether it is “CDMA” (i.e., the original cellular standard employing that technology) or later generation CDMA standards. Nothing in the boilerplate assertion cited by InterDigital suggests how the purported invention might be used in a different context.¹⁵

XV. ‘151 Patent: “utilizing the radio resources for the uplink shared channel or the downlink shared channel” (claims 1 and 16)

1. Plaintiffs’ Opening Position

Consistent with the plain meaning, the Court should construe this term to mean “using the assigned radio resources for the uplink or downlink shared channel” as used in claim 1, and to mean “the controller is configured to use the assigned radio resources for the uplink or downlink shared channel” as used in claim 16. Claim 1 and 16 explicitly refer to “assigning radio resources for the uplink shared channel or the downlink shared channel,” and additionally refers to “utilizing the radio resources.” ’151 at 5:58-6:9; 6:61-7:11. This is entirely consistent with the specification which broadly teaches taking “appropriate action” with respect to the assigned radio resources. By example, the specification teaches that the WTRU uses the assigned radio resources to schedule reception or transmission on the uplink or downlink shared channel:

The WTRU 106 then takes appropriate actions (step 210) depending on the decision in step 208 to receive or transmit data packet via DL or UL channels. For example, the WTRU 106 may recognize exactly when to initialize a data reception procedure via the DL channel 108 or when to initialize a data transmission procedure via the UL channel 110.

¹⁵ Defendants’ proposed construction defines the radio resources using a channelization code, not a code *and* a specific time period as implied by InterDigital.

Id. at 5:40-46. Moreover, the patentee did not disavow any scope for this term in the specification or during prosecution. Absent such disavowals, the plain language should control. *See Medtronic Inc. v. Boston Scientific Corp.*, 695 F.3d 1266, 1275 (Fed. Cir. 2012). Therefore, the Court should adopt InterDigital's construction.

2. Defendants' Answering Response

In claim 1, this term means "either transmitting data on the uplink shared channel or receiving data on the downlink shared channel depending on whether the assigned radio resources are for the uplink shared channel or downlink shared channel." Claim 1 requires that the handset determine whether the channel assignment information is for assigning "radio resources" for the uplink or downlink shared channel. The claim then requires "utilizing *the* radio resources," *i.e.* the radio resources identified by the channel assignment information, for either the uplink or downlink shared channel. The way the radio resources are used depends on whether the radio resources are for the uplink or downlink shared channel (*see* 151 Pat. at Abstract ("The WTRU takes an appropriate action based on whether the message is for assigning radio resources to the UL channel or the DL channel."); *see also id.* at FIG. 3). If uplink, the radio resources are used to transmit data on the assigned channel; if downlink, the radio resources are used to receive data on the assigned channel (*id.* at 5:25-55 ("The WTRU 106 then takes appropriate actions (step 210) depending on the decision in step 208 to receive or transmit data packet via DL or UL channels")). InterDigital's construction is improper because it does not differentiate between uplink and downlink. Under InterDigital's construction, the claim would be satisfied if the radio resources were used to receive data, even when the handset determined that the channel assignment information was for *uplink* transmission. The intrinsic record does not support that scenario. Accordingly, Defendants' construction should be adopted.

In claim 16, "utilizing the radio resources ..." is indefinite because a person of ordinary skill in the art at the time of the purported invention would not have understood whether claim 16, an apparatus claim, requires utilizing the radio resources (a method step) or having a controller configured to utilize the radio resources (a device capability). *See Rembrandt Data*

Techs., LP v. AOL, LLC, 641 F.3d 1331, 1339-40 (Fed. Cir. 2011) (finding an apparatus claim indefinite for improperly including a method step). InterDigital acknowledges this issue with its proposed construction, which defines “utilizing” in claim 16 alone to mean “the controller is configured to use” without any support. To the contrary, the prosecution history reveals that the applicants specifically amended the apparatus claims by converting other method steps into device capabilities (*e.g.*, to state that the controller is *configured to* perform the two determinations), but *left alone* the method step limitation of utilizing the radio resources (*see* Ex. 36 (151 Pat. Pros. Hist., Apr. 12, 2010 RCE) at 3). Claim 16 is thus indefinite. *See Rembrandt*, 641 F.3d at 1339-40 (rejecting the patentee’s argument that the “transmitting” limitation should be treated as a typographical error and rewritten by the court to be “a transmitter section for transmitting the trellis encoded frames”).

3. Plaintiff’s Reply to Defendants’ Answering Response

The parties’ proposed constructions differ in two key respects. First, Defendants propose that “utilizing” is limited to “transmitting[/receiving] data on the uplink or downlink shared channel.” This is inconsistent with the plain meaning of “utilizing” and with the intrinsic record. The specification explains that the WTRU “**takes appropriate actions** depending on the decision [] to receive or transmit data packet via DL or UL channels” ’151 at 5:34-43. This is far broader than merely transmitting or receiving data. “Tak[ing] appropriate actions” can include recognizing that already-received data is intended for the WTRU, as explained below. And that phrase would not have been used to modify “to receive or transmit data packet” if transmitting and receiving were the only actions contemplated.

Second, Defendants’ proposal imports into the claims the additional limitation “depending on whether the assigned radio resources are for the uplink or downlink shared channel.” In effect, Defendants impose a time requirement into the claims, where data cannot be “received” until *after* the determination has been made that the assignment (i) is for the WTRU, and (ii) it is for downlink. Not only is this unsupported by the intrinsic record, but it improperly excludes the preferred embodiment, HS-SCCH. This is so because with the HS-SCCH, the

WTRU begins receiving data on a data channel *before* it determines that the assignment is for the WTRU. (See Ex. 15 (Dahlman) at § 9.3.7; Fig. 9.22.) Defendants' proposed construction would not cover the preferred embodiment and therefore, cannot be correct. See *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (“[A] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’”) (citation omitted).

Also erroneous is Defendants' assertion that the phrase “utilizing the radio resources ...” in claim 16 is indefinite. “Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005). “When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity.” *Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1557 (Fed. Cir. 1996). Here, a person of ordinary skill in the art would understand “utilizing” in claim 16 as “to utilize” (a device capability) consistent with the remainder of the language of claim 16 (a system claim). “Utilizing” in claim 16 is essentially a typographical error which the Court may correct. See *CBT Flint Partners, LLC v. Return Path, Inc.*, 654 F.3d 1353, 1358 (Fed. Cir. 2013) (“It is well-settled law that ... a district court may correct an obvious error in a patent claim.”) (citation omitted)).

4. Defendants' Sur-Reply

The claims require utilizing *radio resources*, not data transmitted on those resources. InterDigital admits that “a ‘radio resource’ is simply the means for communicating the control information”. Utilizing a means for communication refers to transmitting or receiving data on those resources (see 151 Patent at 5:34-43 (“*takes appropriate actions* (step 210) depending on the decision in step 208 *to receive or transmit data packet* via DL or UL channels”). The Court should reject InterDigital's attempt to expand the scope of this limitation to cover use of information instead of radio resources. InterDigital also incorrectly argues that Defendants' construction excludes the preferred embodiment, which they allege utilizes resources *before* the claimed determinations are made (*id.* at 10). The preferred embodiment of the patent, however,

requires no such timing. To the contrary, the 151 Patent specifically describes that the WTRU receives data after determining whether the channel assignment information is for a downlink channel (151 Pat. at 5:34-43 (“tak[ing] appropriate actions (step 210) depending on the decision in step 208 *to receive or transmit data packet* via DL or UL channels”); 5:43-46 (“the WTRU 106 may recognize exactly when to initialize a data reception procedure via the DL channel ...)). The fact that the prior art channel may have used different timing is irrelevant.

As to claim 16, InterDigital argues that this Court should rewrite a method step in apparatus form to preserve validity, but none of their cases support that result. Rather, the Federal Circuit has held that such claims should be found invalid as indefinite. *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1339-40 (Fed. Cir. 2011).

XVI. '151 Patent: “channel assignment information” (claims 1, 8-16, 23-24)

1. Plaintiffs’ Opening Position

This term should be construed to mean “information regarding radio resource assignment for the uplink or downlink channel.” This construction is consistent with the claim language, which refers to assignment of information for a channel. The plain language of the claims also makes clear that the thing being assigned to the uplink or downlink channel is the radio resource: “determining whether the channel assignment information is for assigning radio resources for the uplink shared channel or the downlink shared channel.” *See* '151 at 6:4-7 (claim 1).

The specification is consistent with the plain language. It teaches that “the **present invention** is related to a method and system for providing channel assignment information to support uplink and downlink transmissions.” *See id.* at 1:18-20. The patent’s reference to “the present invention” signals that this disclosure applies to the invention as a whole, and not merely to an embodiment. *See Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006).

The specification further teaches that in order to accomplish this aspect of the invention:

The WTRU receives a message from the Node-B via the common control channel ... The WTRU determines whether the message is intended for the WTRU and, if so, the WTRU determines whether the message is for assigning radio resources to

the UL channel or the DL channel. The WTRU takes an appropriate action based on whether the message is for assigning radio resources to the UL channel or the DL channel.

In accordance with the present invention, the common control channel 112 is utilized for the transmission of radio resources assignment information for both UL and DL transmissions [T]he WTRU 106 is configured to recognize whether a particular transmission is intended for assigning radio resources for the DL or the UL transmissions.

'151 at 2:16-20; 2:22-31; 3:30-50; *see also id.* at 3:15-29; 3:51-5:24. Given the plain claim language and intrinsic record, the Court should adopt InterDigital's construction.

2. Defendants' Answering Response

This term should be given its plain and ordinary meaning, but, to the extent a construction is necessary, the term should be construed as "information identifying a channel assigned to the WTRU." During prosecution of the 405 Patent, the parent of the 151 Patent, the applicants argued that Du did not disclose channel assignment information because Du disclosed dedicated channels, which have static channel assignments (*see* Ex. 37 (405 Pat. Pros. Hist., Feb. 27, 2006 Reply) at 15-16). The applicants explained that the claims required shared data channels, which are "dynamically adjusted" (*id.* at 15-16). Because the assignments are dynamically changing for shared channels, a WTRU must be told which channel to use. The channel assignment information provided in the control channel serves that purpose, *i.e.* it tells the WTRU which shared data channel is assigned to that WTRU.

InterDigital's construction attempts to expand the plain and ordinary meaning of "channel assignment information" to include any information "*regarding*" assignment. The term "regarding" is ambiguous. If read broadly, channel assignment information would include not only information that *identifies* the assigned channel but also any information *related to* the channel that was assigned. For example, InterDigital's expert in the ITC Investigation stated that

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(*see* Ex. 47 (Brogioli Rbt. Rpt.) at ¶ 177). Such an interpretation ignores the purpose of the invention and would capture virtually all "downlink control information" within the meaning of "channel assignment information" (*see* Ex. 28 (151

Pat. Pros. Hist., Jan. 29, 2009 Reply) at 2 (amending the claims to require “receiving downlink control information including ~~common~~ channel assignment information”) (emphasis in original)). See *Cat Tech LLC v. TubeMaster, Inc.*, 528 F.3d 871, 885 (Fed. Cir. 2011) (refusing to adopt a construction that renders a claim limitation meaningless).

3. Plaintiff’s Reply to Defendants’ Answering Response

The parties dispute whether the “channel assignment information” is information that must “*identify* / channel assignment” (Defendants’ position), or whether it only need be information “*regarding* radio resource assignment” (InterDigital’s position). There is nothing in the intrinsic record to support narrowing this term to require “identifying” the channel assignment. Indeed, Defendants’ construction excludes various types of channel assignment information including, for example, power limitations on a channel that has been or is assigned.

Moreover, Defendants’ prosecution history arguments are misplaced. Nowhere in the cited Office Action Response did the applicants argue that “channel assignment information” must “identify channel assignment.” (See Ex. 37 (405 PH, Feb. 27, 2006 Reply) at 15-16.) Instead, applicants noted that “Du fails to disclose a scheme of providing channel assignment information” and “merely discloses that a dedicated uplink and downlink channel should be allocated to a mobile terminal.” (See *id.* at 15.) Nothing in this statement limits the claims to “identifying channel assignment.” Thus Defendants’ proposed construction should be rejected.

4. Defendants’ Sur-Reply

InterDigital’s positions ignore the purpose of the invention and the point of this particular limitation. Because the WTRU assigned to a shared channel changes, channel assignment information is transmitted to allow a WTRU to identify which uplink or downlink channel is assigned to that WTRU (Ex. 37 (405 Pat. Pros. Hist., Feb. 27, 2006 Reply) at 15-16). InterDigital seeks to expand the scope of the disputed term to include information that does not allow a WTRU to determine which particular channel is assigned to that WTRU, and which has nothing to do with the alleged invention. In its Reply, InterDigital argues, without citing any evidence, that “power limitations on a channel that has been or is assigned” is channel assignment

information, but such information does not inform a WTRU which uplink or downlink channel is assigned to that WTRU. Such information may pertain to a channel, but it is not information about the channel *assignment*.

XVII. '151 Patent: “downlink control information” (claims 1, 3-6, 9, 16, 18-21, 24)

1. Plaintiffs’ Opening Position

The Court should construe this term to mean “information transmitted on a downlink control channel.” This construction is consistent with the plain claim language, which calls for a “WTRU receiving downlink control information via a ... downlink control channel.” Moreover, this construction is consistent with the specification, which confirms that “downlink control information” refers to “information transmitted on a downlink control channel.” *See, e.g.*, Figs. 1-3; Abstract; 1:33-55; 2:20-31; 3:30-45; and 3:57-59. Absent limiting statements by the patentee in the specification or prosecution history, and there are none here, the plain language controls. *See Medtronic*, 695 F.3d at 1275.

2. Defendants’ Answering Response

This term should be construed to mean “[the] complete set of control information transmitted from a base station to one or more WTRUs.” In a wireless system, information is transmitted from a base station to a WTRU or from a WTRU to a base station. “Downlink” modifies “control information” to indicate the control information is transmitted from the base station to the WTRU (*see* 151 Pat. at claims 1 and 16 (requiring that the downlink control information be received by the WTRU)). Claims 1 and 16 require that the WTRU determine whether the downlink control information is intended for the WTRU based on the WTRU ID-masked CRC. This determination is a “[c]onfirmation that a demodulated transmission is intended for the UE” (Ex. 24 (151 Prov.) at ¶¶ [0018], [0025]). A determination whether the transmission is intended for the WTRU thus checks whether the complete set of control information received is intended for the WTRU, not part of it. Only Defendants’ proposed construction capture this concept, and it should thus be adopted.

3. Plaintiff's Reply to Defendants' Answering Response

Defendants' proposal differs from InterDigital's in one key respect. Defendants limit their construction to a "*complete set of* information transmitted from a base station to one or more WTRUs." Defendants' attempt to impose a "complete set" requirement is wholly unsupported. Nothing in the intrinsic record requires that the downlink control information be a "complete set." In fact, neither the word "complete," nor any equivalent term or idea, appears in the '151 Patent. Furthermore, a "complete set of information" is wholly undefined, and introduces ambiguity rather than clarity to the claim. Thus, Defendants' proposal should be rejected.

4. Defendants' Sur-Reply

Contrary to InterDigital's arguments, the purported invention of the 151 Patent requires that the determination of whether the control information received on the physical channel is intended for the UE be based on the entire or complete transmission of control information on that channel (e.g., the 3 time slot transmission on the HS-SCCH), not part of it (Ex. 24 (151 Prov.) at ¶¶ [0018], [0025]; 151 Pat. at 1:37-39). Defendants' construction should thus be adopted.

XVIII. '151 Patent: "radio resources" (claims 1, 10-14, 16)

1. Plaintiffs' Opening Position

The Court should construe this term to mean "resources for uplink or downlink transmissions from or to the WTRU." This is consistent with the specification's usage of the term "radio" in reference to uplink or downlink transmissions from or to the WTRU:

The Node-B 104 is controlled by the RNC 102, and dynamically allocates radio resources for both UL and DL transmissions from and to the WTRU 106.

Therefore, each Node-B 104 dynamically allocates radio resources for DL and UL transmissions to and from the WTRU 106 through an HS-DSCH and an EU channel, respectively.

In accordance with the present invention, the common control channel 112 is utilized for the transmission of radio resources assignment information for both UL and DL transmissions and a specific indication is provided to distinguish whether the radio resource assignment is for either UL or DL transmission.

'151 at 3:25-45; *see also id.* at Fig. 3; 5:25-27; 5:35-40.

The primary difference between Defendants' proposed construction and InterDigital's is that Defendants attempt to limit this term to "physical resources." In effect, Defendants read "physical" into "resources." There is no basis in either the claim language or intrinsic record to limit the claims as Defendants propose. Accordingly, their construction should be rejected and InterDigital's adopted.

2. Defendants' Answering Response

This term should be given its plain and ordinary meaning, but, to the extent necessary, it should be construed as "physical resources for uplink or downlink transmissions [from or to a WTRU]." The only dispute between the parties is whether the term "physical" should be included in the construction. It is unclear whether InterDigital intends for its construction to encompass resources that are not physical, but there can be no legitimate debate that "radio" resources refer to the resources that exist at the physical layer. Indeed, InterDigital acknowledges as much by construing "same *physical* downlink control channel" as a "radio resource," thus equating radio resources with physical channels. If "radio resources" is construed to include resources that are not "physical," then the physical downlink control channel would include logical resources, which, as discussed above, the applicant expressly distinguished (Ex. 28 (151 Pat. Pros. Hist., Jan. 29, 2009 Reply) at 5-6 ("The broadcast control channel is not a physical downlink control channel")). Accordingly, Defendants' proposed construction should be adopted.

3. Plaintiff's Reply to Defendants' Answering Response

There appears to be no genuine dispute among the parties with regard to the construction of this term standing alone.

4. Defendants' Sur-Reply

Plaintiff admits that radio resource must be physical. As only Defendants' construction includes this agreed-upon limitation, it should be adopted.

XIX. '151 Patent: "shared channel" (claims 1, 9-14, 16)**1. Plaintiffs' Opening Position**

This term should be construed to mean "a radio resource that can convey information to or from a plurality of WTRUs." This construction is consistent with the plain meaning of the claim language. This meaning is also consistent with the specification, which uses the terms "radio resource" and "channel" interchangeably and reveals that a shared channel is a channel for communicating with a plurality of WTRUs. *See, e.g.*, '151 at 1:33-36 ("signaling channel, a high speed shared control channel ... conveys radio resource allocation information to a plurality of ... [WTRUs]"); *see also id.* at 1:40-42 ("HS-SCCH indicates that data would be transmitted to a WTRU on a high speed downlink shared channel. ..."); 1:58-65 ("shared DL control channel ... provides fast and dynamic allocation of UL radio resources for UL transmissions"); 3:40-50 ("common control channel 112 is utilized for the transmission of radio resources assignment information"). In addition, the specification also reveals that a "shared channel" conveys information to a plurality of WTRUs: "The signaling channel, a high speed shared control channel (HS-SCCH), conveys radio resource allocation information to a plurality of wireless transmit/receive units (WTRUs)." *See id.* at 1:33-36. Accordingly, this term should be construed consistent with this usage.

2. Defendants' Answering Response

This term should be construed as a "channel that can convey information to or from a plurality of WTRUs." The parties agree that a "shared channel" can convey information to or from a plurality of WTRUs. The sole dispute is whether to replace the claim term "channel" with "a radio resource." Replacing channel with radio resource is improper because it would limit a shared channel to a *physical* shared channel defined by a radio resource. That limitation is inappropriate, as claim 1 expressly describes the "downlink channel" as physical but does not describe the "shared channel" as a physical channel.

The requirement of a "shared channel" in the claims was added to distinguish systems that used dedicated channels (Ex. 37 (405 Pat. Pros. Hist., Feb. 27, 2006 Amendment) at 15-16).

In contrast to dedicated channels, the channel assignment for a shared channel is “dynamically adjusted depending on a plurality of factors ...” (*id.*). The use of the term “shared” to modify “channel” was thus strictly intended to indicate that the channel could be used to convey information from or to multiple WTRUs.

InterDigital seeks to further limit the type of channel by replacing the term “channel” with “radio resource.” Aside from whether a channel is shared, a person of ordinary skill in the art would have understood that there were several types of channels, including physical and transport channels. For example, the 151 Patent identifies the HS-SCCH, which is a physical shared channel, and a high speed downlink shared channel (HS-DSCH), which is a transport shared channel (151 Pat. at 1:33-34, 41-42; Ex. 38 (3GPP TS 25.211 V.5.2.0) at § 4.1.2.7; *see also* Ex. 28 (151 Pat. Pros. Hist., Jan. 29, 2009 Reply) at 6 (distinguishing physical channels from “layer 3” broadcast channels)). Both types of channels are “shared” but only one is “physical.” InterDigital’s construction, which uses the term “radio resource,” improperly attempts to limit the recited “shared” channel to a “shared” *physical* channel even though the claim recites no such limitation.

3. Plaintiff’s Reply to Defendants’ Answering Response

The parties’ proposals are consistent with how each defined “radio resources.” Because there appears to be no dispute with regard to the meaning of “radio resource,” there also appears to be no genuine dispute with regard to the meaning of “shared channel.” Although Defendants profess concern that the “radio resource” in InterDigital’s proposed construction suggests a shared physical channel, under Defendants’ proposed construction, the “shared channel” must be able to convey information to or from WTRUs. And it is well known that information cannot be conveyed to or from WTRUs without a physical channel.

4. Defendants’ Sur-Reply

InterDigital argues that, because higher level channels must be conveyed to or from WTRUs using a physical channel, a shared channel is physical. InterDigital’s argument, however, conflates a channel with how it is transmitted, and is contrary to prosecution

statements, which expressly distinguished higher level channels, such as “level 3” channels, from physical channels (Ex. 28 (151 Pros. Hist., Jan. 29, 2009 Reply) at 6).

XX. '151 Patent: “based on WTRU identity (ID)-masked cyclic redundancy check (CRC) parity bits” (claims 1, 16)

1. Plaintiffs’ Opening Position

This term should be construed to mean “based on cyclic redundancy check parity bits masked by a masking code associated with the WTRU.” This construction is consistent with the specification. The specification discloses that “[t]he WTRU determines whether the message is intended for the WTRU,” 151 at 2:25-26, and “[t]he WTRU 106 then determines if the message is intended for the WTRU 106 (step 206). A WTRU-specific CRC may be utilized for this purpose.” *Id.* at 5:32-35. Additionally, the specification teaches, “the WTRU ... decoding the received transmission with a WTRU-specific CRC.” *Id.* at 4:21-22; *see also id.* at 4:38-46. Based on the plain claim language of claim 1 and the specification, the Court should adopt InterDigital’s proposed construction.

2. Defendants’ Answering Response

This term should be construed as “by comparing the WTRU identity (ID)-masked cyclic redundancy check (CRC) transmitted along with the downlink control information with the WTRU ID-masked CRC generated by the handset using the downlink control information.” As discussed above, the applicants originally sought to claim any determination of whether the downlink control information was intended for a WTRU, but then amended the claims to require that the determination be based on the WTRU ID-masked CRC (Ex. 29 (151 Pat. Pros. Hist., May 6, 2009 Reply) at 2-3). REDACTED

(Ex. 39 (Min Rpt.) at ¶¶ 273-84). Defendants’ construction should therefore be adopted.

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants’ proposal reads in the limitation a “WTRU ID-masked CRC generated by the handset using the downlink control information.” There is no support in the intrinsic record for

this limitation. The intrinsic record does not require that the CRC be performed by comparing the masked CRC received with WTRU-generated masked CRC. Instead, Defendants baldly assert that comparing “the masked CRC that is received with a locally generated CRC” is the only way to determine whether downlink information was intended for a WTRU “based on the WTRU ID-masked CRC.” Defendants simply are wrong. A CRC may be performed in other ways such as by using the WTRU ID to unmask the masked CRC that is received and comparing the unmasked CRC with a WTRU-generated unmasked CRC. Defendants improperly seek to exclude this approach from the claims.

4. Defendants’ Sur-Reply

InterDigital criticizes Defendants’ construction because a CRC check “may be performed in other ways,” but InterDigital cites no supporting evidence. In contrast, Defendants proposal is consistent with the amendments made by the applicant and the understanding of a person of ordinary skill in the art.

XXI. ’151 Patent: “and to” (claim 16)

1. Plaintiffs’ Opening Position

The meaning of this term is plain on its face, and therefore it does not require construction. Defendants attempt to import a specific ordering into the claims by requiring that “determining that the downlink control information is intended for the WTRU” occur before “determining whether the channel assignment information is for assigning radio resources for the uplink shared channel or the downlink shared channel.” This is inconsistent with the claim language and the specification.

The plain meaning of “and to” does not impose a sequence. Moreover, claim 1 is instructive on this point. Claim 1 tracks claim 16, but uses the term “and if so” in place of “and to.” The parties agree that “and if so” imposes a sequential requirement. The patentee’s decision to use “and to” instead of “and if so” demonstrates a conscious decision to not limit claim 16 to a particular sequence. This is consistent with the specification and the ’049 App., both of which disclose non-sequential embodiments of the ’151 invention. *See, e.g.*, ’151 at Abstract, 2:25-29;

2:53-55; 5:25-40; '049 App. at [0018], [0025], [0031]. None of the claim language, specification, or prosecution history, support excluding these embodiments. Accordingly, the Court should reject Defendants' proposed construction and adopt InterDigital's.

2. Defendants' Answering Response

This term should be construed as “and after determining that the downlink control information is intended for the WTRU,” which is the same construction that the parties have agreed to for the term “and if so.” The 151 Patent's prosecution history warrants the same construction because the Applicant relied on a consequential relationship between the determining steps to obtain allowance of both claims. In particular, claim 1 was amended to distinguish Du by adding the requirement that a WTRU determine whether the downlink control information is intended for the WTRU “and if so” determining whether the channel assignment information was for uplink or downlink (Ex. 28 (151 Pat. Pros. Hist., Jan. 29, 2009 Reply) at 2, 8). The applicants then argued that claim 12 (which issued as claim 16) “include[s] similar elements as claim 1” and “are not anticipated by Du for at least the reason stated above” (*id.* at 8). InterDigital is bound by its representation to the USPTO that claims 1 and 16 had similar elements, and thus “and to” and “and if so” should be construed the same. *See Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1381 (Fed. Cir. 2011) (“The patentee is bound by representations made and actions that were taken in order to obtain the patent.”); *see also Seachange Int'l, Inc. v. C-Cor Inc.*, 413 F.3d 1361, 1373 (Fed. Cir. 2005).

3. Plaintiff's Reply to Defendants' Answering Response

Defendants attempt to import a specific ordering into the claims by requiring that “determining that the downlink control information is intended for the WTRU” occur before “determining whether the channel assignment information is for assigning radio resources for the uplink shared channel or the downlink shared channel.” This is inconsistent with the claim language and the intrinsic record. Indeed, with the exception of a purported prosecution history disclaimer argument, Defendants cite no intrinsic support for their construction.

But Defendants' disclaimer argument lacks merit. There was no disclaimer. The applicants amended claim 1 to include, *inter alia*, the term "and if so", but the applicants did not rely on this amendment to overcome Du. (*See* Ex. 16 ('151 PH, Jan. 29, 2009 Reply) at 5-8.) Moreover, when "and if so" was added to claim 1, there was no parallel language in claim 12 (which issued as claim 16). (*See id.* at 3.) Therefore, the scope of claim 16 could not have been affected by the meaning of the "and if so" language that only was added to claim 1.

4. Defendants' Sur-Reply

InterDigital argues that there is no intrinsic support for Defendants' construction, which requires a specific sequence. This argument overlooks the only described embodiment of the '151 Patent, which requires that the determination of whether the downlink control information is intended for a WTRU occur prior to the determination of whether the channel assignment information is for uplink or downlink (*see* '151 Pat. at 2:25-39, 5:35-40, FIG. 3).

XXII. '244 Patent: "configured to" (claims 1, 4-6, 9-12, 15-21)

1. Plaintiffs' Opening Position

This term should be construed to mean "operable (or arranged) to." This construction is consistent with the term's plain meaning. *See, e.g.*, Ex. 6, IDC868ITC13821568-569 (The New Oxford American Dictionary (2001)) at p. 360 (defining "configure" as "arrange or order ... so as to fit for a designated task"); Ex. 7, IDC868ITC60020112-14 (Random House Webster's College Dictionary (2000)) at p. 928 (defining "operable" as "capable of being put into use, operation, or practice"). Moreover, nothing in the intrinsic record supports straying from the plain meaning. Accordingly, the Court should adopt InterDigital's proposal.

2. Defendants' Answering Response

The dispute regarding this term is whether it covers something that has already occurred (configured) or something that can be modified in the future (configurable). The term "configured to" clearly refers to configuration that has already occurred, and should be construed to mean "set up to," which is consistent with the term's plain meaning (*see, e.g.*, Ex. 40

(Merriam-Webster's Collegiate Dictionary (10th ed. 1993)) at 242 ("to set up for operation esp. in a particular way").

InterDigital attempts to transform the term "configured to" to "configurable to" with its proposed construction of "operable (or arranged) to." To the extent InterDigital is using the term "arranged to" or "operable to" to capture a configuration that can happen in the future, either construction is incorrect. *See, e.g., Nystrom v. TREX Co.*, 424 F.3d 1136, 1145 (Fed. Cir. 2005).

3. Plaintiff's Reply to Defendants' Answering Response

Here, the dispute is whether, as Defendants contend, the IEEE 802.11 transceiver must communicate using the W-LAN without any action by the user, or whether it is sufficient that the transceiver is "arranged/operable to" communicate with the W-LAN, as InterDigital contends. Defendants' construction is meant to exclude cases where users activate a W-LAN connection (*e.g.*, by clicking a button). As this Court recently held, if a "system is expressly created so that the user may take advantage of a certain advantageous function, it is 'configured' to perform that function. The Court sees no reason to exclude a system that requires the user to perform a very simple task, such as clicking a box, to enable the function." *Riverbed Tech., Inc. v. Silver Peak Sys., Inc.*, C.A. No. 11-484-RGA, 2013 U.S. Dist. LEXIS 102589, at *3 (D. Del. July 23, 2013); *see also Brocade Commc'ns Sys., Inc. v. AJO Networks, Inc.*, No. C 10-3428 PSG, 2013 WL 831528, at *11 (N.D. Cal. Jan. 10, 2013) ("[I]n an apparatus claim involving software, the infringement occurs because the software includes the patented feature: 'although a user must activate the functions ... by selecting those options'" (quoting *Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1118 (Fed. Cir. 2002).) Nothing in the intrinsic record requires more than the capability – the necessary hardware and/or software – to communicate using the IEEE 802 transceiver. *See, e.g., infra* XXIII (discussing 2:50-3:10, which discloses that "automatically" connecting is desirable, but not required); (*see also* Ex. 20 (800 ID) at 303, 314 (finding that the invention merely required the capability to connect to W-LAN, and was not limited to automatic connect).) Thus, Defendants' proposal should be rejected.

4. Defendants' Sur-Reply

As Defendants described, this term should be construed to mean “set up to.” InterDigital continues to argue that this term means a mere “capability” rather than meaning a particular configuration, as is required by the “configured to” language that the patentee chose for the claims. It is improper for InterDigital to now use litigation to rewrite this term. Furthermore, a recent case from this jurisdiction directly contradicts Plaintiffs’ proposed construction. In *Intellectual Ventures I LLC v. Altera Corp.*, CV 10-1065-LPS, 2013 WL 3913646, at *7 (D. Del. July 26, 2013) this Court construed the plain and ordinary meaning of “configured to” mean “to set up for operation especially in a particular way”, which is consistent with the construction proposed by Defendants.

XXIII. '244 Patent: “configured to communicate with an IEEE 802.11 wireless local area network” (claim 1)

1. Plaintiffs’ Opening Position

This term’s meaning is clear on its face, and therefore does not need construction. But if construed, the Court should adopt InterDigital’s proposal: “[operable/arranged to] transmit data to and/or receive data from an IEEE 802.11 wireless local area network.” This construction comports with the claim’s plain language, which refers to IEEE 802.11 transceiver “communicat[ing] packet data with the IEEE 802.11 wireless local area network.” ’244 at claim 1. This construction also comports with the plain meaning of “communicate.” *See, e.g.*, Ex. 8, Hargrave’s Communications Dictionary (defining “communication” as “[t]he transmission of information from one point to another separate and isolated point.”).

Moreover, there is no basis in the claim language or in the intrinsic record for narrowing this term, as Defendants’ propose, to require that the IEEE 802.11 transceiver “always connect directly to” the WLAN “when such a connection is possible.” To the contrary, the specification incorporates the Geier reference, *see* 2:27-34, which discloses that private WLANs may be secured (*e.g.*, using WEP), and therefore may require user interaction before data can be communicated to the WLAN. *See, e.g.*, Geier at 138-41, 149-52. In such circumstances, the

802.11 transceiver may not connect to the WLAN despite the WLAN being available, if for example the user fails to perform the required steps (e.g., provide the appropriate shared key). Accordingly, Defendants' proposed construction should be rejected.

2. Defendants' Answering Response

In view of the intrinsic record, this term should be construed to mean "set up to always connect directly to an IEEE 802.11 wireless local area network when such a connection is possible." This connection is mandated by intrinsic record, which makes clear that communication with the IEEE 802.11 wireless local area network happens directly, in order to address and overcome shortcomings of prior art single-mode devices.

Under "Summary of the Invention," the 244 Patent states that the invention solves the problem of *manual* selection of networks in the prior art, which required manual reconfiguration when switching between single-mode devices, each capable of connecting to only one type of network (244 Pat. at 2:54-62). Further, the specification states that the "present invention ... connects *directly* to a W-LAN ... when such a connection is possible" and "the same equipment can be used without any reconfiguration and even *without the knowledge of the user*" (244 Pat. at 2:63-3:2; *see also id.* at 3:2-5; 2:50-54). Defendants' construction properly reflects these limits on the scope of the invention. *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) ("When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention.").

Even if the claim could be read otherwise, the patentee explicitly disavowed the use of manual selection by contrasting the claimed invention to that feature of the prior art by explaining that the invention "can automatically select the cheaper and faster W-LAN when possible" (244 Pat. at 2:50-42). *See Retractable Technologies, Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1306 (Fed. Cir. 2011), *cert. denied*, 133 S. Ct. 833 (U.S. 2013).

Moreover, contrary to InterDigital's assertions, reliance on the prior art Geier reference does not broaden the scope of the claims. InterDigital argues that the Geier reference discloses that some private WLANs may be secured, and therefore may require some user interaction.

However, the 244 Patent incorporates only pages 137 and 149 of Geier, which describe beacon frame formatting and do not address securing private WLANs (244 Pat. at 9:5-7). *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (“To incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.”).

Even if the pages InterDigital cites in Geier were incorporated in their entirety, it would not change the scope of the 244 Patent claims. *See Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1553 (Fed. Cir. 1996) (“[I]ncorporation by reference does not convert the invention of the incorporated patent into the invention of the host patent.”). Moreover, these pages do not address the utilization of a dual-mode device at all, much less how it should behave when it detects a WLAN, and thus it teaches nothing that contradicts the 244 patent’s teaching of automatic connection when possible. Thus, one of ordinary skill would understand this term to mean always connecting directly to an IEEE 802.11 wireless local area network when such a connection is possible.

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants’ proposal requires “always connect[ing] directly to an IEEE 802.11 wireless local area network.” In effect, Defendants read “automatically” into the claim. (*See, e.g.*, Section XXIII.2 (“[T]he patentee explicitly disavowed the use of manual selection ... by explaining that the invention ‘can automatically select the ... W-LAN.’”.) Nothing in the intrinsic record justifies limiting the claims in this manner.

Defendants’ cites to the specification do not support limiting the claims to “always” and “directly” connecting to the W-LAN. The first passage, 2:50-3:10, states merely that it would “be *desirable* to have a device which *can* automatically select the cheaper and faster W-LAN.” Desirable abilities are not requirements. The second passage, 2:63-3:2, states the “present invention ... is a single device which connects directly to a W-LAN using a protocol such as IEEE 802.11 when such a connection is possible, and automatically reverts to connecting to the

long range network only when out of range of the W-LAN” Thus, this passage teaches only the possibility of automatically reverting to the long-range (e.g., cellular) network when W-LAN is out of range, and, in contrast, connecting to W-LAN not automatically, but when such a connection is possible – which may occur by authorization, payments, password provision, etc.

Defendants are correct that when a patent describes the features of the present invention as a whole, that description may be limiting. But this is only the case where there is no contradictory intrinsic evidence. *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1136 (Fed. Cir. 2011) (“we have found that use of the phrase ‘present invention’ or ‘this invention’ is not always so limiting, such as where ... other portions of the intrinsic evidence do not support applying the limitation to the entire patent). Here, the specification elsewhere confirms, for example at 2:50-3:10, that automatic connection is merely permissible and “desirable.” (*See also* Ex. 20 (800 ID) at 303, 314.) Furthermore, claim 16, which depends from claim 1, recites automatically connecting to the IEEE 802.11 W-LAN: “packet data is automatically communicated to the IEEE 802.11 wireless local area network when the IEEE 802.11 wireless local area network is available.” Therefore, under claim differentiation, claim 1 presumptively does not require “always connect[ing] directly to the W-LAN.” *See Phillips*, 415 F.3d at 1315. Accordingly, Defendants’ proposed construction should be rejected.

4. Defendants’ Sur-Reply

Contrary to InterDigital’s statements, the third paragraph under “Summary of the Invention” clearly states that there is a desirable “automatic connection” feature as a solution to the problem with *manual* configuration that existed in the prior art (244 Pat. at 2:50-62). The following paragraph then makes clear that this desirable feature *is part of the present invention* to distinguish it over the prior art: “[t]he present invention ... connects directly to a W-LAN using a protocol such as IEEE 802.11” (244 Pat. at 2:63-67). Unlike the prior art, the present invention was set up to *always* connect directly to an IEEE 802.11 wireless local area network when such a connection is possible. Moreover, InterDigital’s suggestion that, instead of automatically, a connection could occur by “authorization, payments, password provision, etc.” is not disclosed in

the specification of the 244 Patent, and InterDigital's attempt to expand the scope of the specification should be rejected as attorney argument.

InterDigital's argument regarding claim differentiation is inapposite because dependent claim 16 adds the additional feature of a detector. Claim differentiation does not apply where additional limitations are present. Furthermore, claim differentiation does not apply because under InterDigital's construction, the broader independent claim is not supported by the specification. Importantly, "the doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1480 (Fed. Cir. 1998). Here, the intrinsic record clearly dictates Defendants' construction.

XXIV. '244 Patent: "maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels" (claim 1)

1. Plaintiffs' Opening Position

The Court should construe this term to mean "maintain a logical connection with the cellular wireless network when none of the [two or more physical layer channels allocable by the subscriber unit as needed to transfer data] are in use by the subscriber unit." This construction is consistent with the plain claim language, specification, and prosecution history.

Claim 1 explicitly recites "maintain[ing] a communication session ... in the absence of the plurality of assigned physical channels." Dependent claim 5 similarly requires "maintain[ing] a communication session" and "releas[ing] the plurality of assigned physical channels." This suggests that the "communication session" is a "logical connection" as opposed to a physical connection because, under the plain claim language, the communication session¹⁶ is maintained even when the physical channels have been released (or unassigned).

The specification and prosecution history further support this construction. For example, the specification explains that a "communication session" is established between two sites, such

¹⁶ A session, under its plain meaning, is "an instance of one or more protocols which provides the logical endpoints through which data can be transferred." Ex. 9, IDC868ITC13821584-86 (Dictionary of Computer Science, Engineering, and Technology.)

as computers, using one of the two protocols (WLAN or cellular). *See* '244 at 3:55-63. By maintaining the communication session when the physical channels are released, it is not necessary to use “the overhead associated with having to set up an end to end connection every time that data needs to be transferred.” *See id.* at 4:19-22. In other words, when data needs to be transferred, the subscriber unit can simply start using the available physical layer channels because the necessary overhead information for setting up the connection is preserved. The specification explains that this is done by “establishing a **logical connection** using a higher layer protocol, such as a network layer protocol.” *Id.* at 4:5-11. This is consistent with the patentee’s statements in prosecution. *See, e.g.*, January 28, 2011, Response to Office Action, pp. 8-9 (noting that “the present specification states that a subscriber unit may establish a logical connection using a higher layer protocol ... [i]n other words, the communication session may be maintained via the logical connection ... even as one or more physical wireless channels are released.”) In view of this evidence, the Court should adopt InterDigital’s proposed construction.

2. Defendants’ Answering Response

Here, the dispute between the parties is whether this term requires spoofing, consistent with the intrinsic record, including the prosecution history, or whether the term’s construction should be expanded to include *any* logical connection, as InterDigital proposes. Consistent with the intrinsic record, this term should be construed to mean “spoof the subscriber unit to make it appear that a cellular wireless communication link continuously available in an absence of the plurality of assigned physical channels.”

In a First Office Action, the examiner observed that “the specification provides no basis for the claimed subject matter” of “maintain a communication session...in the absence of the plurality of the assigned physical layer channels” (Ex. 41 (098 App., Jul. 28, 2010 Office Action) at 2). In response to these rejections, the applicant argued that “maintaining a communication sessions, above a physical layer, in the absence of the assigned physical channels” was supported and pointed to two separate paragraphs [0023] and [0078] of the specification (in the 244 Patent at 3:55-4:5 and at 10:28-43, respectively), each of which discloses only spoofing, to argue that

the rejected claims were enabled (Ex. 42 (098 App., Jan. 28, 2011 Response) at 8-9). Based on the applicant's response, the examiner reached the following conclusion:

For example, Applicants generally point to paragraphs 0023 and 0078 (see paper dated 1/28/2011 at page 9 which basically indicates *some sort of spoofing* (i.e. spoof the terminal into believing that a sufficient wide wireless communication link is continuously available).

(Ex. 43 (098 App., Feb. 23, 2011 Final Office Action) at 3.)

The applicant never contested the examiner's conclusion equating the "maintaining ..." limitation with "spoofing." The cited paragraphs in the 244 Patent specification describe "spoofing" as "mak[ing] it appear to the second wireless digital communication path as though the bandwidth were continuously available during the communication session" (244 Pat. at 3:63-66) and, more specifically, "loop[ing] back synchronous data bits to spoof the terminal equipment 110 into believing that a sufficiently wide wireless communication link 160 is continuously available." (*id.* at 10:29-34). The 244 Patent specification describes spoofing in other paragraphs as well:

More specifically, *the technique, which is here called spoofing*, involves stripping off the lower layers of the protocol while reformatting higher layer messages for transmission using a more efficient CDMA based encapsulated protocol.

(244 Pat. at 4:29-33);

The bandwidth management functionality 29 preferably provides a number of functions in order to keep both the physical layer and network layer connections properly maintained over multiple communication links 30. For example, *certain physical layer connections may expect to receive a continuous stream of synchronous data bits regardless of whether terminal equipment at either end actually has data to transmit. Such functions may also include rate adaption, bonding of multiple channels on the links, spoofing, radio channel setup and takedown.*

(*id.* at 6:30-39). And in two other paragraphs, spoofing is included as the "present invention" (244 Pat. at 9:27-63), which InterDigital admits should limit the scope of the claims (*see* Section

XXV. 1. at 71 (“The patent’s reference to ‘the present invention’ signals that this disclosure applies to the invention as a whole, and not merely to an embodiment.”); 244 Pat. at 9:35-42 (“The subscriber unit 101 itself preferably consists of an interface 120, a CDMA protocol converter 130 that performs *various functions including spoofing* 132 ...”); *id.* at 9:58-63 (“In general, *spoofing* 132 consists of insuring that the subscriber unit 101 appears, to the terminal equipment 1 10, to be connected to the public network 6 19 (FIG. 5) on the other side of the base station 605 at all times.”). Having identified “spoofing” as the sole support for the “maintaining ... “ limitation, InterDigital cannot now redefine the term to cover concepts unrelated to spoofing. The Court should therefore construe this term consistent with the applicant’s definition used during prosecution.

3. Plaintiff’s Reply to Defendants’ Answering Response

Again, nothing in the intrinsic record warrants limiting the claims to “spoofing” as Defendants’ propose. Defendants contend that during prosecution the applicant tied the “communication session” limitation to “spoofing.” However, the paragraphs relied upon by Defendants do not mention “spoofing.” Regardless, the Examiner noted that the language cited by Defendants was merely an “example” of support. (*See* Ex. 17 (’244 PH, February 23, 2011, Office Action) at 11-12.) The Examiner further stated, that the applicant also pointed to the discussion of the protocol converters and Fig. 1 in support of its position on this limitation. (*Id.*) Thus, the arguments regarding “communication session” were not limited as Defendants contend. Indeed, the applicant explicitly noted that the “specification states that a subscriber unit may establish a logical connection using a higher layer protocol ... [i]n other words, the communication session may be maintained via the logical connection ... even as one or more physical wireless channels are released.” (Ex. 18 (January 28, 2011, Response to Office Action) at 8-9.) In short, there is no disclaimer, and taken as a whole, the prosecution history supports InterDigital’s proposal. *See Elbex Video, Ltd. v. Sensormatic Elecs. Corp.*, 508 F.3d 1366, 1372-73 (Fed. Cir. 2007).

Defendants also rely on two paragraphs in the specification that discuss “spoofing” in the context of “the present invention.” ’244 Patent at 9:27-63. But Defendants again ignore contradictory intrinsic evidence, including the patent’s disclosure that “the second wireless digital communication path is provided by establishing a logical connection using a higher layer protocol, such as a network layer protocol,” *id.* at 4:5-11, and the prosecution statements discussed above. When, as here, there is contradictory intrinsic evidence, a description of the “present invention” does not limit the scope of the invention. *Absolute Software, Inc.*, 659 F.3d at 1136. Accordingly, the Court should reject Defendants’ proposed construction.

4. Defendants’ Sur-Reply

Contrary to InterDigital’s position, paragraphs [0023] and [0078] disclose spoofing, and were cited by the applicant in response to an enablement rejection (Ex. 42 (098 Appl., Jan. 28, 2011 Response) at 8-9). Paragraph [0078] (now 10:28-43 in the 244 Patent) explicitly recites “the *spoofing* function” and “loop[ing] back synchronous data bits to *spoof* the terminal equipment.” Moreover, the examiner explicitly interpreted these paragraphs to indicate “some sort of spoofing” and used this interpretation to find support for the “maintaining” limitation (Ex. 43 (098 App., Feb. 23, 2011 Final Office Action) at 3).

InterDigital’s allegedly “contradictory intrinsic evidence” from the beginning of paragraph [0023] that describes “establishing a logical connection” does not suggest a different result (citing 244 Pat. at 4:5-11). However, “establishing” a connection is not “maintaining” a connection. Later, that paragraph describes how the spoofing function “maintains” the connection (244 Pat. at 4:10-18). In the very next paragraph, the specification summarizes the technique described in the previous two paragraphs ([0023]-[0024]) as spoofing: “the technique, which is here called *spoofing*” (244 Pat. at 4:29-33).

XXV. '244 Patent: “a [the] plurality of assigned physical channels” (claims 1, 5, 7, 15, 21)**1. Plaintiffs' Opening Position**

The Court should construe this term to mean “two or more physical layer channels allocable by the subscriber unit as needed to transfer data.” The intrinsic record support this construction.

Several dependent claims require the “processor,” a component of the subscriber unit, to assign (and release or deallocate) the “assigned physical channels” depending on data traffic. For example, claim 21 (which depends from claim 1) states that “the processor is configured to release the plurality of assigned physical channels in response to a low utilization of the plurality of assigned physical channels or in response to a detection of the IEEE 802.11 wireless local area network.” '244 at 12:28-33. Likewise, claims 5 and 15 (which depend from claim 1) respectively recite that “the processor ... release[s] the plurality of assigned physical channels” and “the processor ... allocate[s] and deallocate[s] at least one of the plurality of assigned physical channels.” *Id.* at 11:30-32; 12:1-3. This is consistent with InterDigital's position that the subscriber unit allocates the “assigned physical channels” as needed to transfer data—as noted below the '244 Patent uses “allocate” and “assign” interchangeably, and “deallocate” and “release” interchangeably.

InterDigital's proposed construction is further supported by the specification. Each disclosed embodiment of the invention requires the subscriber to allocate the physical channel. The specification also notes that a “subscriber unit 101 incorporating the features of the present invention” is shown in Figure 6, and described at 9:27-10:59. In this subscriber unit of “the present invention,” the “bandwidth management function (of the subscriber unit) 134 is responsible for allocating and deallocating CDMA radio channels 160 as required.” *See id.* at 9:64-66, FIG. 6. As discussed, the patent's reference to “the present invention” signals that this disclosure applies to the invention as a whole, and not merely to an embodiment. *See Honeywell Int'l, Inc.*, 452 F.3d at 1318.

Likewise, the specification teaches that channel assignment or allocation occurs “only when there is actual data present from the terminal equipment to the CDMA transceiver 140.” ’244 at 10:33-36. Thus, “when data is not being presented upon the terminal equipment to the network equipment, the bandwidth management function 134 (of the subscriber unit) deallocates initially assigned radio channel bandwidth 160 and makes it available for another transceiver and another subscriber unit 101.” *Id.* at 10:37-43. This is consistent with the fact that the ’244 Patent is directed to data communications. *See, e.g., id.* at 1:34-53. In fact, there is no disclosure in the ’244 Patent of channels being assigned to send voice information. Instead, the ’244 Patent exclusively mentions channel assignment or allocation in relation to data.

2. Defendants’ Answering Response

The dispute between the parties regarding this term is encompassed in the “assign” and “allocate” issue discussed below. InterDigital’s construction for this term also leads to nonsensical results and simply cannot be correct. Considering InterDigital’s construction of “allocate,” this term would mean “two or more physical layer channels [assignable] ...” In effect, “assigned physical channels” means “channels assignable” which does not make any sense or provide clarification as to the meaning of the term. The intrinsic record, however, supports Defendants’ proposed construction for “assigned physical channels,” which means “physical channels available for the subscriber unit to select for use” (*e.g.*, 244 Pat. at 2:8-10; 6:30-7:2; 10:36-38).

In addition, contrary to InterDigital’s assertion, not every disclosed embodiment requires the subscriber unit to allocate the physical channels. In fact, the patent discloses that channels may be “allocated centrally,” and not solely by a subscriber unit (244 Pat. at 3:40-43). Moreover, as addressed previously, the 244 Patent specification proves that there is indeed a difference between allocation and assignment (*id.* at 10:36-38; *see also* Section XXVI.2, below). That is, “assigned” bandwidth only needs to be available to select for use, while “allocated” bandwidth is within the assigned bandwidth and that that which is actually selected for use. Thus, the

specification is clear that the term means “[a plurality of] physical channels available for the subscriber unit to select for use.”

3. Plaintiff’s Reply to Defendants’ Answering Response

The parties dispute whether this limitation requires, as InterDigital contends, that the subscriber unit allocate physical channels as needed to transfer data. Defendants cite one passage from the specification, (’244 Patent at 3:40-43), that purportedly discloses allocating channels centrally rather than by a subscriber unit, but otherwise fail to address the intrinsic evidence in InterDigital’s opening brief. While this passage refers to “a public network, in which channels are allocated centrally,” this merely describes an embodiment in which a public network would make a “pool” of channels available to all subscriber units for data transfer. It says nothing about the network allocating these channels in response to the subscriber unit’s need to send data. Nor does it mention a subscriber unit or sending data. It merely describes the nature of the public network for one embodiment.

Specifically, this sentence explains that the public network may allocate the bandwidth that all subscriber units are permitted to use to send data. However, the subscriber unit of the invention is configured to dynamically assign sub-portions of allocated radio channels, such as these centrally allocated channels, as required to transmit data. ’244 Patent at 9:64-10:3. Thus, each subscriber unit is responsible for allocating a sub-portion of that bandwidth – that is, one or more of the physical layer channels available to all the subscriber units – when the subscriber unit has data to transmit. This is consistent with the ALJ’s findings in the 800 ID. (*See* Ex. 20 at 304-306.) Accordingly, the Court should reject Defendants’ proposed construction.

4. Defendants’ Sur-Reply

InterDigital argues that the specification “says nothing about the network allocating these channels in response to the subscriber unit’s need to send data”. But the absence of such a statement is irrelevant. The specification teaches a bandwidth management function that *makes channels available for use* [assigns channels], and that a subset of those available channels are *selected for use* [allocated] to send data. Inventor Gorsuch indisputably uses “assignment” is this

way as shown in his own prior patent, cited on the face of the 244 patent, linked through a chain of references, and sharing identical passages and similar figures:

[D]ata transfer may then begin using the single assigned subchannel However, if the input buffer should become empty, ... the subchannel will remain assigned in the event that data traffic again resumes.... However, ... should a low traffic timer expire, ... the single subchannel 300 is released.

(Ex. 52 (536 Pat.) at 8:60-9:5). This removes any doubt that by “assigned,” the patentee means the channel is available even if not being used. Release occurs after a timed period of non-use.

InterDigital’s “pool of channels” argument should be rejected as no support is provided for it. As outlined by Defendants, the Court should construe this term as “physical channels available for the subscriber unit to select for use.”

XXVI. '244 Patent: “release” (claims 5, 21); “allocate”; “deallocate” (claim 15)

1. Plaintiffs’ Opening Position

These terms are similar and/or related, and therefore, should be address together. The Court should construe “allocate” to mean “assign”; and construe “release” and “deallocate” to mean “stop the subscriber unit from using” (as the latter terms are used synonymously in patent).

In ordinary use, the terms “assign” and “allocate,” as well as their derivatives, are synonyms. *See* Ex. 10, IDC868ITC13821593-596 Roget’s II The New Thesaurus, Third Edition, at 29 and 56 (identifying allocate and assign as synonyms, and identifying allocation and assignment as synonyms). The specification likewise uses these terms interchangeably. For example, the specification describes “allocating” wireless channels when needed to provide a very high speed connection and, similarly, describes that a variable number of channels may be “assigned” to accommodate a desired data transfer rate. *See* '244 at 4:22-26, 7:11-13.

The specification similarly uses the term “release” and “deallocate” interchangeably to connote non-use. The specification explains that, when a physical layer channel is “released” by the subscriber unit, its bandwidth is available to other subscriber units. Thus, the specification equates “released” with “no longer in use.” Specifically, at 4:13-23, the specification explains

that when “the physical layer channel is released,” this “frees wireless channel bandwidth for use by other subscriber units.” This is effected, the specification explains, such that “when data is not being presented” the subscriber unit’s bandwidth management function “deallocates initially assigned radio channel bandwidth 160 and makes it available for another transceiver and another subscriber unit.” ’244 at 10:37-43. At 4:1-4, the specification further explains that in the “absence of such a need to transport data communications ... the bandwidth is made available” to other transceivers. Accordingly, InterDigital’s proposed construction is consistent with the intrinsic evidence.

2. Defendants’ Answering Response

The dispute between the parties regarding these terms is whether different words in the claims require different meanings. The intrinsic record demonstrates that, consistent with case law, “allocate” and “assign” have different meanings, as do “deallocate” and “release.” InterDigital’s contrary position that these unique terms have identical constructions is unsupported. Absent evidence to the contrary, different terms in the claims require different meanings. *CAE Screenplates v. Heinrich Fiedler GmbH*, 224 F.3d 1308, 1317 (Fed. Cir. 2000). Here, the different words “allocate” and “assign” require different meanings as do the different words “release” and “deallocate.” Both intrinsic and extrinsic evidence support the conclusion that the terms are *not* equivalent. Accordingly, this Court should construe the term “release” to mean “make no longer assigned,” the term “allocate” to mean “select for use,” and the term “deallocate” to mean “select to stop using.”

Here the patentee chose specific words to provide unique meanings, and the 244 Patent specification illustrates that there are indeed different meanings for “allocation” and “assignment” when it discloses that: “the network layer need not *allocate* the *assigned* wireless bandwidth for the entirety of the communication session” (244 Pat. at 10:36-38). The specification thus discloses that a mobile station can be assigned more bandwidth than it decides to use, or allocate. That is, “assigned” bandwidth only needs to be available to select for use, while “allocated” bandwidth within the assigned bandwidth is that which is actually selected for

use. Moreover, the preceding sentence of the specification, “wireless bandwidth is allocated only when there is actual data present from the terminal equipment ...” (*id.* at 10:34-36) is consistent with “allocated” bandwidth being that which is actually selected for use.

InterDigital also fails to address that, irrespective of the context, equating “allocate” with “assign” in the 244 Patent would result in a nonsensical phrase: “the network layer need not allocate the [allocated] wireless bandwidth.” And similarly in claim 15, “wherein the processor is further configured to [assign] and deallocate at least one of the plurality of assigned physical channels.” See *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1255 (Fed. Cir. 2010) (“A claim construction that renders asserted claims facially nonsensical ‘cannot be correct.’”). Thus, from the use of “assigned” and “allocate” in the specification and claims, it is clear that the patentee drew a distinction between the two words. The correct construction of the claim should preserve that choice and avoid a nonsensical result.

InterDigital’s reliance on the Roget’s Thesaurus is also misplaced. Even if these words are considered synonyms, it says nothing about their precise meaning. “The thesaurus is a device for finding specific words or phrases for *general* ideas A thesaurus gives you possibilities, and you choose the one that you think is best within your particular context” (Ex. 44 (Roget’s Int’l Thesaurus (6th ed., 2001)) at xiii).

Furthermore, InterDigital’s position that the terms “release” and “deallocate” have the same construction is contrary to the entire intrinsic record. In particular, claims 5 and 15 both depend on claim 1 and recite separate limitations for “release” and “deallocate.” Under the doctrine of claim differentiation, these terms clearly cannot have the same meaning. *AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1248 (Fed. Cir. 2007) (“[T]his court enforces a ‘presumption that each claim in a patent has a different scope.’”).

InterDigital’s sole basis for its argument is that the subscriber unit’s bandwidth management function “deallocates initially assigned radio channel bandwidth 160 and makes it available for another transceiver and another subscriber unit”. But this sentence does not equate deallocating with releasing. Rather, as explained in the specification at columns 7, 9 and 10, the

bandwidth management function performs *two* functions: it assigns channels (makes them available to the handset), and it allocates assigned channels when needed (selects from assigned channels). “For example a bandwidth management function may *make only a certain number of channels available* at any time” (244 Pat. at 7:24-26). Making the channels available is later described as “dynamically *assigning* sub-portions of the CDMA radio *channels* 160 ...” (*id.* at 10:1-2). The bandwidth management function also selects from (allocates) available (assigned) channels when needed to send data. “A *subset* of the *available channels* 30 is selected, and then the optimum number of bits for each subframe intended to be transmitted over respective one of the channels, is then chosen” (*id.* at 7:26-29). This is later described as allocating or deallocating. “The bandwidth management function 134 is responsible for allocating and deallocating CDMA radio channels 160 *as required*” (*id.* at 9:64-66). “However, wireless bandwidth is allocated only when there is actual data present from the terminal equipment to the CDMA transceiver 140” (*id.* at 10:34-36). As a result, “the network layer need not allocate [use] the assigned [available] wireless bandwidth for the entirety of the communications session” (*id.* at 10:36-38).

In this context, the sentence relied on by InterDigital says “when data is not being presented [for transmission] ..., the bandwidth management function 134 deallocates [stops using] initially assigned [available] radio channel bandwidth 160 and makes it available for another transceiver [releases it for reassignment] ...” (*id.* at 10:37-41). In other words, this sentence refers to *two separate* things that the bandwidth management function does, it “deallocates” assigned channel bandwidth (stops using it) and then “makes it available” (releases for reassignment). This is perfectly consistent with Defendants’ construction and supports the distinction between deallocation and release.

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants argue the terms “allocate” and “assign” must be given different meanings, as must “deallocate” and “release.” It is well settled that different claim terms may have the same meaning when used interchangeably throughout the specification. *AIA Eng’g Ltd. v. Magotteaux Int’l S/A*, 657 F.3d 1264, 1276 (Fed. Cir. 2011). This is the case here. “Assign” and “allocate,” as

well as their derivatives, are synonyms, and are used interchangeably in the specification. (*See* Ex. 20 (800 ID) at 305 (finding these terms synonymous).)

Defendants rely on a misinterpretation of a single passage at 10:36-38 to argue the contrary. This passage states “the network layer need not allocate the assigned wireless bandwidth for the entirety of the communications session.” Defendants assert this means “a mobile station can be assigned *more bandwidth* than it decides to use, or allocate.” This assertion is plainly false. The passage says nothing about the assignment of more bandwidth than is needed. It says that the bandwidth in question need not be used “for the entirety of the communication session.” Specifically, after the bandwidth is *initially* assigned by the subscriber unit, that bandwidth need not *remain* assigned, or allocated, “for the entirety of the communications session.” Instead, as the specification explains, “when data is not being presented ... the bandwidth management function deallocates initially assigned radio channel bandwidth 160 and makes it available for another transceiver and another subscriber unit 101.” ’244 Patent at 10:38-43. That is, bandwidth that was initially assigned can be deallocated – so that it is no longer assigned – when no longer needed to transfer data. That makes the bandwidth available for others to use.

The supposed “nonsensical” phrases on which Defendants rely result from Defendants’ refusal to admit that allocate and assign are synonyms. When the specification explains that the “network layer need not allocate the assigned bandwidth for the entirety of the communication session,” this merely means, as explained above, that the bandwidth that was initially assigned need not remain assigned for the entirety of the communication session. Rather than repeating the term “assign,” the inventors used its synonym. The same applies to claim 15.

As to “release” and “deallocate,” Defendants assert that the bandwidth management function performs two functions: assigning channels, which makes them available to the handset, and allocating channels, which means selecting them for use. Defendants therefore argue that release is the inverse of assign, and is distinct from deallocation. Specifically, Defendants argue that only some channels or sub-portions of the bandwidth may be assigned, and this means that

there are two separate functions: assignment and allocation, whose inverses are deallocation and release. Defendants rely on 7:24-26 and 7:26-29, which state that only a certain number of channels may be “available,” and a “subset of the available channels” is selected. In other words, channels are available for assignment, and some, but not all, of those available channels may be assigned by the subscriber unit as needed to transfer data. Defendants argue these “available” channels are the “assigned channels,” a subset of which are then allocated. However, “available” does not mean “assigned” – an “available” channel is one that can be, but is not, assigned. For example, the claims of the parent ’970 Patent specifically recite “physical layer channels are *available for assignment*” – confirming that in the context of the patent, “available” means “can be assigned,” not “is assigned.” (Ex. 19 (’970 Patent) at claims 1, 10). Thus, Defendants’ misinterpretation of the specification is based on falsely equating “available” and “assigned,” while ignoring that “assign” and “allocate” do mean the same thing.

The specification does not disclose a “release” that is separate from “deallocation.” The specification explains that when the subscriber unit has no data to transmit, it “deallocates” bandwidth, which “makes it available” to others. ’244 Patent at 10:40-43. However, Defendants argue that this passage means that the subscriber unit first deallocates bandwidth, and then *separately* releases the deallocated bandwidth. Defendants support this argument by re-writing 10:37-41, improperly replacing “assigned” with “available,” and assuming their own conclusion is correct by replacing “makes it available for another transceiver” with “releases it for reassignment.” The claims must be construed based on the intrinsic evidence, not Defendants’ revisions of that evidence. Unrevised, the passage at 10:37-41 confirms that deallocation makes bandwidth available – with no mention of any separate “release.” ’244 Patent at 10:38-43.

Defendants’ interpretation, that channels are first assigned, and then a subset is allocated, makes nonsense of the descriptions in the specification. For example, the specification states that the subscriber unit’s “bandwidth management function 134 *deallocates* initially *assigned* radio channel bandwidth 160.” *Id.* at 10:40-41. If, as Defendants assert, a portion of the assigned bandwidth is “allocated,” it makes no sense to say that the “initially assigned bandwidth” is

deallocated. Only the *allocated portion* of the assigned bandwidth would be deallocated. As explained below, this would leave the unallocated portion of the assigned bandwidth – the portion that was not needed to transfer data – still assigned to the subscriber unit. Therefore, “bandwidth is allocated only when there is actual data present.” *Id.* at 10:33-36. This careful allocation of channels and their bandwidth only as needed would be completely pointless if unneeded channels are assigned, as required by Defendants’ interpretation.

In fact, under Defendants’ interpretation, the assigned, but unallocated, bandwidth would never be used, and would never be released. Defendants admit that even under their theory, both “assignment” and “allocation” are performed by the bandwidth management unit – which is located in the “a subscriber unit 101 incorporating the features of the present invention.” ’244 Patent at 9:27-28, 9:64-66, Fig. 6, item 134. There is no reason the subscriber unit would first assign channels, and then later allocate, or use, only a subset of those channels. In fact, under Defendants’ theory, the subscriber unit will first assign channels, later allocate a *subset* of those channels to transmit data, then deallocate that *subset*, and then release that *subset*. The remaining assigned channels – which the subscriber unit never needed or used – will evidently remain assigned to the subscriber unit. This makes no sense. The straightforward explanation is that assignment and allocation are different terms for the same function: when the subscriber unit needs to transmit data, its bandwidth management unit allocates or assigns channels to transmit that data, and, when the subscriber unit no longer needs to transmit data, it deallocates or releases those channels, which makes the channel bandwidth available to others. ’244 Patent at 10:34-43 (describing the subscriber unit of the present invention, in Figure 6); (*see also* Ex. 20 (800 ID) at 307, 310, 312 (finding that released means no longer in use).)

Last, and not least, Defendants’ claim differentiation argument is misplaced. Claims 5 and 15, while having some overlap, differ in scope. *See Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1370 (Fed. Cir. 2007) (declining to apply claim differentiation to separate groups of claims where there were differences varying the scope of the claims). For example, claim 5’s processor is “configured to release [deallocate]” all of the plurality of assigned physical

channels, while claim 15's processor is "configured to allocate and deallocate [release]" one or more of the assigned physical channels.

4. Defendants' Sur-Reply

Despite InterDigital's tortuous attempt to reword the specification, "allocate" and "assign" clearly have different meanings because both are used in claim 15 and in a single sentence of the specification (10:36-38) in a way that distinguishes their meaning. And as noted above, the patentee clearly distinguishes "release" from mere non-use (Ex. 52 (536 Pat.) at 8:63-9:5). Accordingly, this Court should construe the term "release" to mean "make no longer assigned," "allocate" to mean "select for use," and "deallocate" to mean "select to stop using."

XXVII. '244 Patent: "a circuit configured to select the IEEE 802.11 transceiver" (claim 4)

1. Plaintiffs' Opening Position

This term should be construed to mean "hardware alone or in combination with software [operable/arranged to] select the IEEE 802.11 transceiver." Again, the intrinsic evidence supports this construction. For example, the '244 specification teaches that the various claimed components may be implemented in hardware and/or software—"Note that the path switches (circuits) 21 1 A, 21 1B may be implemented in software or hardware, or a combination of hardware and software. Other functions may also be implemented in hardware and/or software which may further be shared by the W-LAN and CDMA sections where appropriate". *See, e.g.*, '244 at 10:53-59. This is consistent with the plain meaning of "circuit," which may include "virtual ... pathways, channels or conductors," *i.e.*, software. *See* Ex. 11, IDC868ITC13821579-583 (Petersen, J., Data & Telecommunications Dictionary (1999)) at p. 150. Accordingly, in view of the intrinsic evidence, the Court should adopt InterDigital's proposal.

2. Defendants' Answering Response

The dispute between the parties is whether, consistent with the intrinsic and extrinsic evidence, the term discloses hardware, as Defendants propose, or requires hardware in combination with software, as InterDigital proposes. If the Court determines that a construction is necessary, then this term should be construed to mean "hardware alone [set up to] choose

exclusively the IEEE 802.11 transceiver.” The term “circuit” has a sufficient plain and ordinary meaning to one of skill in the art that denotes hardware. As cited by InterDigital in support of its construction of “circuit” in the 847 Patent, *The Authoritative Dictionary of IEEE Standard Terms* defines “circuit”, in part, as “[a]n arrangement of interconnected electronic components that can perform specific functions upon application of proper voltages and signals” (Ex. 45 (Authoritative Dictionary of IEEE Standards Terms (7th. ed. 2000) at 168).

InterDigital’s “path switches” argument is a red herring. During prosecution of the 970 Patent, which is the parent to the 244 Patent and shares the same specification, the applicant chose to amend the claims by removing the word “switch,” a term used in the specification, and replacing it the hardware-centric term “circuit,” which does not appear in the specification (Ex. 46 (970 Pat. Pros. Hist., May 5, 2009 Amendment) at 2). The language in the 244 Patent that InterDigital relies on for its proposed construction refers to switches and *not* to circuits (*see* 244 Pat. at 10:53-59).

Moreover, as discussed above (*see* Section XXIII.2), the 244 Patent specification is clear that the invention is set up to choose *exclusively* the IEEE 802.11 transceiver whenever WLAN is detected (*see also* 244 Pat. at Abstract, 2:50-3:9, 3:11-63, 8:53-67, 9:36-50, 10:43-59, Fig. 6).

3. Plaintiff’s Reply to Defendants’ Answering Response

Defendants attempt to limit the term “circuit” to “hardware.” There is no intrinsic or extrinsic support for this construction. First, the specification discloses that “the path switches 211A, 211B may be implemented in software or hardware” and that “[o]ther functions may also be implemented in hardware and/or software.” ’244 Patent at 10:54-59; (*see also* Ex. 20 (800 ID) at 302 (finding “circuit” may mean hardware in combination with software.) Defendants argue that this language “refers to switches and not to circuits.” This argument is misplaced. First, the above refers to “switches” and “[o]ther functions.” Therefore, it contemplates that other components (and not just switches) may be implemented in software. Second, the ’244 Patent uses “circuit” and “switch” interchangeably. For example, in the May 5, 2009, amendment Defendants cite, applicant replaced the term “circuit *switch*” with the term “circuit” – and not

“switch” with “circuit” as Defendants contend. The term “circuit switch” suggests the referenced “switch” is a circuit. Notably, this amendment was voluntary.

Defendants next cherry pick extrinsic evidence. They rely on an IEEE Dictionary to their liking but ignore other contemporaneous dictionaries, including the Data & Telecommunications Dictionary, which defines a circuit as “[a] physical or *virtual collection* of pathways, channels, or conductors interlinking given points or nodes in an orderly fashion to create a means for communications or electrical links.” (Ex. 11 at p. 150.) Both definitions are consistent with InterDigital’s proposal that a “circuit” may be “hardware alone or in combination with software.” Given the intrinsic and extrinsic evidence, Defendants’ proposed construction should be rejected.

4. Defendants’ Sur-Reply

InterDigital attempts to support its proposed construction through an extrinsic definition for “circuit” that does not make sense in the context of the patent. For example, it is unclear how a “virtual collection of ... conductors” relates to the specification. This unrelated definition should be rejected in favor of Defendants’ proposed construction.

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